

## **ATTACHMENT A**

### **NARRATIVE DESCRIPTION OF EXISTING AND PROPOSED SERVICES**

#### Descriptive Information

- General Description and Markets Served
- Corridors (listing)
- Stations (listing)
- Services Description (line by line)

This attachment provides a general description of the services and markets and a list of corridors served, stations included, and line descriptions for proposed services for all regional rail lines for the following four scenarios:

#### Scenarios

- Existing Services
- Year 2030 Baseline Services
- Year 2050 Proposed Services (Alternative 1)
- Year 2050 Proposed Services (Alternative 2)

#### Corridors

For the purpose of this description, corridors are as follows:

- US 101 North Corridor (Cloverdale ↔ Larkspur)
- North Bay Corridors (US 101 ↔ I-80 north of San Pablo Bay)
- I-80 Corridor (Auburn ↔ Oakland)
- East Bay / I-880 Corridor (Oakland ↔ San Jose)
- Peninsula Corridor (San Francisco ↔ San Jose)
- South Counties Corridors (US 101 South & Route 1)
- Transbay Corridors (San Francisco ↔ Oakland & Dumbarton)
- Central Valley Corridors (Sacramento ↔ Fresno)
- Tri Valley Corridor (I-580 & I-205 from East Bay ↔ Lathrop/Manteca)
- East County Corridors (Martinez ↔ Stockton & Concord ↔ Tracy)

## EXISTING SERVICES

US 101 NORTH CORRIDOR (Cloverdale ↔ Larkspur)  
Rail service is currently not provided in this corridor.

NORTH BAY CORRIDORS (US 101 ↔ I-80 north of San Pablo Bay)  
Rail service is currently not provided in these corridors.

## AMTRAK CAPITOL CORRIDOR

### General Description and Markets Served

This service currently operates between Auburn and San Jose via Oakland with a concentration of trains operating between Sacramento and Oakland. In addition to point-to-point corridor travel, trains serve commuter markets into Sacramento from Auburn to the north and from Dixon to the southwest; commuter markets from Fairfield/Vacaville to Oakland and the East Bay; and between Oakland and San Jose.

### Corridors

- I-80 Corridor (Auburn ↔ Oakland)
- East Bay / I-880 Corridor (Oakland ↔ San Jose)

### Stations

- Auburn – terminus for selected trains
- Rocklin
- Roseville
- Sacramento – regional hub; transfer with Sacramento LRT & Amtrak San Joaquins
- Davis
- Suisun/Fairfield
- Martinez – transfer with Amtrak San Joaquin service
- Richmond – transfer with BART
- Berkeley
- Emeryville – transfer with San Francisco Amtrak Thruway Motorcoach
- Oakland Jack London Square – regional hub
- Oakland Coliseum – transfer with BART, AirBART
- Hayward
- Fremont (Centerville) – transfer with ACE
- Santa Clara (Great America)
- San Jose (Diridon) – regional hub; transfer with Santa Clara Valley LRT & Caltrain

### Service Description

Existing service is operated between Auburn and Oakland Coliseum; between Sacramento and Oakland (some trains terminating at Jack London Square, others at Coliseum); and between Sacramento and San Jose. The existing operating plan provides the following trains:

- Auburn ↔ Oakland:  
130 mile route; 190 minute schedule; 41 mph average speed.  
1 train daily each direction: 1 southbound AM peak period train, 1 northbound PM peak train, and no off-peak service.
- Sacramento ↔ Oakland:  
89-95 mile route, 118-138 minute schedule, 41-46 mph average speed.  
8 trains daily each direction, running at irregular headways.
- Sacramento ↔ San Jose via Oakland:  
137 mile route, 185-195 minute schedule, 42-44 mph average speed.  
7 trains daily each direction, running at irregular headways.
- Resulting aggregate headway in Sacramento ↔ Oakland segment: approximately 60 minutes during peak periods and the “shoulders” of the peak periods.

## CALTRAIN

### General Description and Markets Served

This service currently operates between San Francisco and San Jose, with some trains originating/terminating in Gilroy. The line serves overlapping commuter markets into San Jose and San Francisco as well as regional travel between each terminus and principal points between. The current service plan provides a mix of express and local service with essentially balanced operations northbound and southbound during the peak periods.

### Corridors

- Peninsula Corridor (San Francisco ↔ San Jose)
- South Counties Corridors (San Jose ↔ Gilroy)

### Stations

- 4th & King, SF – existing hub & northern terminus; transfer with MUNI bus/LRT
- 22nd Street, SF
- Bayshore, SF
- South San Francisco
- San Bruno
- Millbrae – “baby bullet” station; transfer with BART
- Burlingame
- San Mateo
- Hayward Park
- Hillsdale – “baby bullet” station
- Belmont
- San Carlos
- Redwood City
- Menlo Park
- Palo Alto – “baby bullet” station
- California Avenue
- San Antonio

- Mountain View – “baby bullet” station
- Sunnyvale
- Lawrence
- Santa Clara
- College Park (only 4 trains per day)
- San Jose Diridon – terminus for some trains; regional hub; transfer to Amtrak, ACE & Santa Clara Valley LRT
- Tamien – terminus for some trains; transfer with Santa Clara Valley LRT
- Capitol
- Blossom Hill
- Morgan Hill
- San Martin
- Gilroy – terminus for trains operating south of San Jose

### Service Description

Existing service is operated between San Francisco and San Jose, with approximately half of the trains originating/terminating at Tamien and the other half at Diridon Station. Northbound AM peak service is provided from Gilroy and southbound PM peak service to Gilroy. Local service with trains calling at all stops is provided in the early morning, midday, and late evenings. Limited service, with certain stations being skipped, is alternated with local trains in the midday. During peak hours, “baby bullet” express trains stopping at a few stations only are alternated with “hybrid” limited trains, which provide local service in half of the corridor, and express in the other half. Timed transfers between the “hybrid” limiteds are provided at Redwood City. The existing operating plan provides the following trains:

- Gilroy ↔ San Francisco, local:  
76 mile route; 132-138 minute schedule; 33-35 mph average speed.  
3 trains daily each direction: 3 northbound AM peak period trains, 3 southbound PM peak trains, and no off-peak service.
- San Jose ↔ San Francisco, local:  
46-48 mile route, 91-98 minute schedule, 29-31 mph average speed.  
10 trains daily each direction, running 60 minute headways during off-peak periods.
- San Jose ↔ San Francisco, limited:  
46-48 mile route, 73-91 minute schedule, 31-38 mph average speed.  
24 trains daily each direction; of which 9 run during each peak period at irregular headways, 6 trains running 60 minute headways midday.
- San Jose ↔ San Francisco, express:  
46-48 mile route, 57-66 minute schedule, 44-48 mph average speed.  
11 trains daily each direction, split between the peak periods; irregular headways.
- Average aggregate headway in San Jose ↔ San Francisco segment: approximately 15 minutes during peak periods and 30 minutes off-peak.

## SOUTH COUNTIES CORRIDORS (US 101 South & Route 1)

With the exception of Caltrain service to/from Gilroy, rail service is currently not provided in these corridors.

## TRANSBAY CORRIDORS (Oakland ↔ San Francisco & Dumbarton)

With the exception of the BART Transbay Tube, rail service is currently not provided in these corridors.

## AMTRAK SAN JOAQUINS

### General Description and Markets Served

This service currently operates between Oakland and Bakersfield and Sacramento and Bakersfield with a common segment south of Stockton. Point-to-point corridor travel is the focus of the service, as trains generally operate in the Oakland and Sacramento commuter sheds outside of peak periods.

### Corridors

- Central Valley Corridors (Sacramento ↔ Fresno)
- I-80 Corridor (Oakland ↔ Martinez)
- East County Corridors (Martinez ↔ Stockton)

### Stations (stations south of Fresno not listed)

#### *Oakland ↔ Fresno service:*

- Oakland-Jack London Square – regional hub
- Emeryville – transfer with San Francisco Amtrak Thruway Motorcoach
- Richmond – transfer with BART
- Martinez – transfer with Amtrak Capitol Corridor service
- Antioch
- Stockton-San Joaquin Street
- Modesto
- Denair
- Merced
- Madera
- Fresno

#### *Sacramento ↔ Fresno service:*

- Sacramento – regional hub; transfer with Sacramento LRT & Amtrak Capitol Corridor
- Lodi
- Stockton-Cabral
- Modesto
- Denair
- Merced
- Madera
- Fresno

Service Description (service south of Fresno not included)

The existing operating plan provides the following trains:

- Oakland ↔ Fresno:  
207 mile route; 238-262 minute schedule; 47-52 mph average speed.  
4 trains daily each direction, running at irregular headways.
- Sacramento ↔ Fresno:  
169 mile route, 190-213 minute schedule, 48-53 mph average speed.  
2 trains daily each direction, running at irregular headways.

**ALTAMONT COMMUTER EXPRESS (ACE)**General Description and Markets Served

This service currently operates between Stockton and San Jose, connecting the San Joaquin Valley and Tri-Valley with Silicon Valley.

Corridors

- Tri-Valley Corridor (Stockton ↔ Fremont)
- East Bay / I-880 Corridor (Fremont ↔ San Jose)

Stations

- Stockton-Cabral
- Lathrop/Manteca
- Tracy
- Vasco Road
- Livermore
- Pleasanton
- Fremont (Centerville) – transfer with Amtrak Capitol Corridor
- Great America
- Santa Clara
- San Jose Diridon – transfer with Amtrak, ACE & Santa Clara Valley LRT

Service Description

The current operating plan provides directional service during peak periods and the “shoulders” of the peaks only:

- Stockton ↔ San Jose:  
73 mile route; 139 minute schedule; 31 mph average speed.  
4 westbound trains daily in the morning and 4 eastbound trains daily in the afternoon and evening, operating at irregular headways.

**EAST COUNTY CORRIDORS (Martinez ↔ Stockton & Concord ↔ Tracy)**

Rail service is currently not provided in these corridors.

## 2030 BASELINE SERVICE

### US 101 NORTH CORRIDOR (proposed Sonoma-Marín Area Rail Transit – SMART)

#### General Description and Markets Served

This service would provide an alternative to US 101 between Sonoma and Marin counties. Commuter markets to Santa Rosa, Petaluma and San Rafael would be served, and the terminus in Larkspur would provide a connection to San Francisco via ferry.

#### Corridors

- US 101 North Corridor (Cloverdale ↔ Larkspur)

#### Stations

- Cloverdale
- Healdsburg
- Windsor
- Jennings Road
- Santa Rosa
- Rohnert Park
- Cotati
- Corona Road
- Petaluma
- Novato North
- Novato South
- Civic Center
- San Rafael
- Larkspur – transfer with San Francisco ferry

#### Service Description

Directional service would be operated between Cloverdale and Larkspur during peak hours:

- Cloverdale ↔ Larkspur:  
70 mile route; 93 minute schedule; 45 mph average speed.  
Southbound trains would operate at 30 minute headways during the AM peak period;  
northbound trains would operate at 30 minute headways during the PM peak period.

### NORTH BAY CORRIDORS (US 101 ↔ I-80 north of San Pablo Bay)

Rail service in these corridors would not be provided in the 2030 Baseline.

## AMTRAK CAPITOL CORRIDOR

### General Description and Markets Served

In the 2030 Baseline, this service would continue to operate between Auburn and San Jose via Oakland with a concentration of trains operating between Sacramento and Oakland. In addition to point-to-point corridor travel, peak period trains would serve commuter markets from Auburn into Sacramento; from Fairfield/Vacaville to Oakland and the East Bay; and between Oakland and San Jose.

### Corridors

- I-80 Corridor (Auburn ↔ Oakland)
- East Bay / I-880 Corridor (Oakland ↔ San Jose)

### Stations

- Auburn – terminus for selected trains
- Rocklin
- Roseville
- Swanston – new station
- Sacramento – regional hub; transfer with Sacramento LRT & Amtrak San Joaquins
- Davis
- Dixon – new station
- Fairfield/Vacaville – new station; transfer with North Bay services
- Suisun/Fairfield
- Benicia – new station
- Martinez – transfer with Amtrak San Joaquin service
- Hercules – new station
- Richmond – transfer with BART
- Berkeley
- Emeryville – transfer with San Francisco bus service
- Oakland Jack London Square – regional hub
- Oakland Coliseum – transfer with BART
- Hayward
- Union City – new station; transfer with BART, Dumbarton Rail
- Fremont (Centerville) – transfer with ACE, Dumbarton Rail
- Santa Clara (Great America)
- San Jose (Diridon) – regional hub; transfer with BART, Santa Clara Valley LRT, Caltrain and Dumbarton Rail

### Service Description

Existing service would be increased and provided at regular headways as follows:

- Sacramento ↔ Oakland:  
peak/off-peak headways of 60 minutes
- Sacramento ↔ San Jose via Oakland:  
peak/off-peak headways of 90 minutes



- Resulting aggregate headway in Sacramento ↔ Oakland segment: peak/off-peak headways of 40 minutes

## CALTRAIN

### General Description and Markets Served

In the 2030 Baseline, this service would continue to operate between San Francisco and San Jose, with some trains originating/terminating in Gilroy. The line would serve overlapping commuter markets into San Jose and San Francisco as well as regional travel between each terminus and principal points between. A mix of express and local service, with essentially balanced operations northbound and southbound during the peak periods, would be provided.

### Corridors

- Peninsula Corridor (San Francisco ↔ San Jose)
- South Counties Corridors (San Jose ↔ Gilroy)

### Stations

- Transbay Terminal – new station; regional hub; transfer with BART, MUNI LRT/bus
- 4th & King, SF – existing hub & northern terminus; transfer with MUNI LRT/bus
- 22nd Street, SF
- Bayshore, SF
- South San Francisco (relocated)
- San Bruno
- Millbrae – express station; transfer with BART
- Burlingame
- San Mateo
- Hayward Park
- Hillsdale – express station
- Belmont
- San Carlos
- Redwood City – transfer with Dumbarton Rail
- Menlo Park – transfer with Dumbarton Rail
- Palo Alto – express station
- California Avenue
- San Antonio
- Mountain View – express station
- Sunnyvale
- Lawrence
- Santa Clara – transfer with BART, SJC Airport People Mover
- College Park (only 4 trains per day)
- San Jose Diridon – terminus for some trains; regional hub; transfer with Amtrak, ACE, BART & Santa Clara Valley LRT
- Tamien – terminus for some trains; transfer with Santa Clara Valley LRT
- Capitol
- Blossom Hill
- Morgan Hill
- San Martin

- Gilroy – terminus for trains operating south of San Jose

### Service Description

Northbound AM peak service would be provided from Gilroy and southbound PM peak service to Gilroy. Local service with trains calling at all stops, and limited service skipping certain stations, would be provided all day. During peak hours, “baby bullet” express trains stopping at a few stations only would be operated, and would serve a new Transbay Terminal station in San Francisco. Additional passing tracks and equipment improvements would decrease travel times. Service would be increased and provided at regular headways as follows:

- Gilroy ↔ San Francisco, local:  
76 mile route; 135 minute schedule; 34 mph average speed.  
Northbound trains would operate at 120 minute headways in the AM peak period;  
southbound trains would operate at 120 minute headways in the PM peak period; no off-peak service.
- Gilroy ↔ San Francisco, limited:  
76 mile route; 118-126 minute schedule; 36-39 mph average speed.  
Northbound trains would operate at 40 minute headways in the AM peak period; southbound trains would operate at 40 minute headways in the PM peak period; no off-peak service.
- San Jose ↔ San Francisco, local:  
47 mile route, 87 minute schedule, 32 mph average speed.  
Trains would operate at 80 minute headways in both directions all day.
- San Jose ↔ San Francisco, limited:  
47 mile route, 73 minute schedule, 39 mph average speed.  
Trains would operate at 80 minute headways in both directions all day.
- San Jose ↔ San Francisco, express:  
47 mile route, 55 minute schedule, 51 mph average speed.  
Northbound trains would operate at 60 minute headways in the AM peak period and 90 minutes in the PM peak period; southbound trains would operate at 90 minute headways in the AM peak period and 60 minute headways in the PM peak period; no off-peak service.
- Average aggregate headway in San Jose ↔ San Francisco segment: approximately 10 minutes during peak periods and 20 minutes off-peak.

### SOUTH COUNTIES CORRIDORS (US 101 South & Route 1)

Rail service in these corridors would not be provided in the 2030 Baseline, with the exception of Caltrain service to/from Gilroy.

## DUMBARTON RAIL

### General Description and Markets Served

This service would operate across a reconstructed Dumbarton Rail Bridge to connect the existing Caltrain and Capitol Corridor services. The Silicon Valley and San Francisco commuter markets would be served.

### Corridors

- Transbay Corridor (Dumbarton Bridge)
- Peninsula Corridor (Millbrae ↔ San Jose)

### Stations

#### *Union City ↔ Millbrae service:*

- Union City – transfer with BART, Amtrak Capitol Corridor
- Fremont (Centerville) – transfer with Amtrak Capitol Corridor, ACE
- Newark
- Menlo Park (Chilco Street)
- Redwood City
- San Carlos
- Belmont
- Hillsdale
- Hayward Park
- San Mateo
- Burlingame
- Millbrae – transfer with BART

#### *Union City ↔ San Jose service:*

- Union City – transfer with BART, Amtrak Capitol Corridor
- Fremont (Centerville) – transfer with Amtrak Capitol Corridor, ACE
- Newark
- Menlo Park (Chilco Street)
- Menlo Park (Caltrain)
- Palo Alto
- California Avenue
- San Antonio
- Mountain View
- Sunnyvale
- Lawrence
- Santa Clara – transfer with BART, SJC Airport People Mover
- College Park
- San Jose Diridon – regional hub; transfer with Amtrak, ACE, BART & Santa Clara Valley LRT

### Service Description

Directional service would be operated between Union City and Millbrae and Union City and San Jose during peak hours only:

- Union City ↔ Millbrae:  
28 mile route; 57 minute schedule; 30 mph average speed.  
Westbound trains would operate at 30 minute headways during the AM peak period;  
eastbound trains would operate at 30 minute headways during the PM peak period.
- Union City ↔ San Jose:  
38 mile route; 71 minute schedule; 32 mph average speed.  
Westbound trains would operate at 30 minute headways during the AM peak period;  
eastbound trains would operate at 30 minute headways during the PM peak period.

## AMTRAK SAN JOAQUINS

### General Description and Markets Served

This service would continue to operate between Oakland and Bakersfield and Sacramento and Bakersfield with a common segment south of Stockton. Baseline service would remain essentially unchanged from the existing service.

### Corridors

- Central Valley Corridors (Sacramento ↔ Fresno)
- East County Corridors (Stockton ↔ Martinez)
- I-80 Corridor (Martinez ↔ Oakland)

### Stations (stations south of Fresno not listed)

#### *Oakland ↔ Fresno service:*

- Oakland (Jack London Square) – regional hub
- Emeryville – transfer with San Francisco Amtrak Thruway Motorcoach
- Richmond – transfer with BART
- Hercules – new station
- Martinez – transfer with Amtrak Capitol Corridor service
- Stockton (San Joaquin Street)
- Modesto (BNSF)
- Denair
- Merced
- Madera
- Fresno

#### *Sacramento ↔ Fresno service:*

- Sacramento – regional hub; transfer with Sacramento LRT & Amtrak Capitol Corridor
- Lodi
- Stockton (Cabral)
- Modesto (BNSF)
- Denair
- Merced
- Madera
- Fresno

Service Description (service south of Fresno not included)

The Baseline operating plan would include the following trains:

- Oakland ↔ Fresno:  
207 mile route; 238-262 minute schedule; 47-52 mph average speed.  
4 trains daily each direction, running at irregular headways.
- Sacramento ↔ Fresno:  
169 mile route, 190-213 minute schedule, 48-53 mph average speed.  
2 trains daily each direction, running at irregular headways.

**ALTAMONT COMMUTER EXPRESS (ACE)**General Description and Markets Served

This service would continue to operate between Stockton and San Jose, connecting the San Joaquin Valley and Tri-Valley with Silicon Valley.

Corridors

- Tri-Valley Corridor (I-580 & I-205 between Stockton ↔ Fremont)
- East Bay / I-880 Corridor (Fremont ↔ San Jose)

Stations

- Stockton (Cabral)
- Lathrop/Manteca
- Tracy
- Vasco Road
- Livermore
- Pleasanton
- Fremont (Centerville) – transfer with Amtrak Capitol Corridor, Dumbarton Rail
- Great America
- Santa Clara – transfer with BART, SJC Airport People Mover
- San Jose Diridon – regional hub; transfer to Amtrak, BART, Dumbarton Rail & Santa Clara Valley LRT

Service Description

The Baseline operating plan would provide directional service during peak periods at greater frequency:

- Stockton ↔ San Jose:  
73 mile route; 139 minute schedule; 31 mph average speed.  
Westbound trains would operate at 30 minute headways during the AM peak hour;  
eastbound trains would operate at 30 minute headways during the PM peak hour.

## eBART

### General Description and Markets Served

This service would extend the reach of the BART system into eastern Contra Costa County, providing an alternative to Highway 4 congestion. Commuters in the Highway 4 Corridor would be able to reach employment centers in the East Bay and San Francisco.

### Corridors

- East County Corridors (Pittsburg ↔ Byron)

### Stations

- Pittsburg/Bay Point – transfer with existing BART system
- Somersville Town Center
- Hillcrest Avenue
- Empire Avenue
- Central Boulevard
- Byron

### Service Description

Service would be operated between Pittsburg/Bay Point and Byron in both directions throughout the day:

- Pittsburg/Bay Point ↔ Byron:  
23 mile route; 37 minute schedule; 37 mph average speed.  
Trains would operate at 12 minute headways in both directions throughout the day.

## ALTERNATIVE 1

US 101 NORTH CORRIDOR (Cloverdale ↔ Larkspur, Sonoma-Marín Area Rail Transit)

### General Description and Markets Served

This service would provide an alternative to US 101 between Sonoma and Marin counties. Commuter markets to Santa Rosa, Petaluma and San Rafael would be served, and the terminus in Larkspur would provide a connection to San Francisco via ferry. Additionally, express buses would connect San Rafael with Richmond, San Francisco and Daly City.

### Corridors

- US 101 North Corridor (Cloverdale ↔ Larkspur)

### Stations

- Cloverdale
- Healdsburg
- Windsor
- Jennings Road
- Santa Rosa
- Rohnert Park
- Cotati
- Corona Road
- Petaluma
- Novato North
- Novato South – transfer with North Bay service
- Civic Center
- San Rafael – transfer to express buses
- Larkspur – transfer with San Francisco ferry

### Express Bus Stops

*San Rafael ↔ Richmond Express Bus:*

- San Rafael
- Richmond – transfer with BART, Capitol Corridor and San Joaquins

*San Rafael ↔ Daly City Express Bus:*

- San Rafael – transfer with rail service
- Presidio – transfer with Muni LRT, BART (Option 1a)
- Geary/Park Presidio – transfer to BART (Option 1b)
- 19th/Judah, 19th/Taraval, Stonestown & SF State – transfer with Muni LRT
- Daly City – transfer with BART

### Service Description

Service would be increased above the Baseline to include bidirectional service throughout the day:

- Cloverdale ↔ Larkspur:  
70 mile route; 93 minute schedule; 46 mph average speed.  
Southbound trains would operate at 20 minute headways during the AM peak period; and at 40 minutes midday and during the PM peak period. Northbound trains would operate at 40 minute headways during the AM peak period and midday, and at 20 minute headways during the PM peak period.
- San Rafael ↔ Richmond BART Express Bus:  
12 mile route; 28 minute schedule; 25 mph average speed.  
Buses would meet all trains to and from the US 101 North corridor at San Rafael.
- San Rafael ↔ Daly City Express Bus:  
23 mile route; 41 minute schedule; 34 mph average speed.  
Buses would be scheduled to meet trains with timed transfers at San Rafael.

## NORTH BAY SERVICES

### General Description and Markets Served

These services would include a north-south line providing an alternative in the Highway 29 corridor, and an east-west line connecting Marin County with the Capitol Corridor. Commutes from Napa Valley to San Francisco would be served by an intermodal connection at the Vallejo Ferry Terminal.

In addition to weekday service, Napa Valley has a potential weekend tourist market.

### Corridors

- North Bay Corridors (San Rafael ↔ Fairfield/Vacaville & Saint Helena ↔ Vallejo)

### Stations

#### *San Rafael ↔ Fairfield/Vacaville line:*

- San Rafael – transfer to express buses
- Civic Center
- Novato South – transfer with SMART
- Lakeville Road
- Schellville
- Napa Junction – transfer with service to Saint Helena and Vallejo
- Red Top Road
- Suisun/Fairfield – transfer with Capitol Corridor service
- Fairfield/Vacaville – transfer with Capitol Corridor service

#### *Saint Helena ↔ Vallejo line:*

- Saint Helena – transfer with feeder bus to Calistoga
- Rutherford
- Yountville
- Napa North
- Napa Downtown



- Napa Valley College
- Napa Junction – transfer with service to San Rafael and Fairfield/Vacaville
- American Canyon
- Vallejo Sereno Drive
- Vallejo Ferry Terminal – transfer with ferries to San Francisco

#### Feeder Bus

- Calistoga
- Saint Helena – transfer with rail service to Vallejo

#### Service Description

Service would be provided on two lines intersecting at Napa Junction, where timed transfers would be facilitated:

- San Rafael ↔ Fairfield/Vacaville:  
51 mile route; 62 minute schedule; 49 mph average speed.  
Trains would operate at 60 minute headways in both directions throughout the day.
- Calistoga ↔ Saint Helena Feeder Bus:  
8 mile route; 16 minute schedule; 32 mph average speed.  
Buses would meet all trains to and from the Saint Helena rail terminal.
- Saint Helena ↔ Vallejo Ferry Terminal:  
33 mile route; 53 minute schedule; 37 mph average speed.  
Trains would operate at 60 minute headways in both directions throughout the day.

#### SACRAMENTO ↔ SAN JOSE VIA OAKLAND (Capitol Corridor)

#### General Description and Markets Served

In Alternative 1, the concentration of service between Sacramento and Oakland would be extended to San Jose. In addition to point-to-point corridor travel, trains would serve commuter markets into Sacramento from Auburn to the north and from Dixon to the southwest; commuter markets from Fairfield/Vacaville to Oakland and the East Bay; and between Oakland and San Jose.

#### Corridors

- I-80 Corridor (Auburn ↔ Oakland)
- East Bay / I-880 Corridor (Oakland ↔ San Jose)

#### Stations

- Auburn
- Rocklin
- Roseville
- Swanston
- Sacramento – regional hub; transfer with Sacramento LRT, San Joaquin service

- Davis
- Dixon
- Fairfield/Vacaville – transfer with North Bay services
- Suisun/Fairfield – transfer with North Bay services
- Benicia
- Martinez – transfer with BART, San Joaquin service
- Hercules
- Richmond – transfer with BART, San Rafael express bus
- Berkeley
- Emeryville – transfer with San Francisco bus service
- West Oakland – transfer with BART, Oakland↔Merced via Altamont service
- Oakland Jack London Square – transfer with BART
- Oakland Coliseum – transfer with BART
- Hayward
- Union City – transfer with BART, Dumbarton Rail, Oakland↔Merced via Altamont service
- Fremont (Centerville) – transfer with ACE, Dumbarton Rail
- Santa Clara (Great America)
- San Jose (Diridon) – regional hub; transfer with BART, Caltrain, Dumbarton Rail and Santa Clara Valley LRT

#### Service Description

- Operational improvements anticipated to be in place by Year 2030 will improve schedules by 20% overall even with added stops resulting in 93 minute running time from Sacramento to Oakland (53 mph) and 147 minute running time from Sacramento to San Jose (50 mph)
- Sacramento ↔ San Jose via Oakland:  
122 mile route; 149 minute schedule; 49 mph average speed.  
Peak/off-peak headways of 30 minutes.
- Auburn ↔ San Jose via Oakland:  
156 mile route; 200 minute schedule; 47 mph average speed.  
Peak/off-peak headways of 60 minutes.
- Resulting aggregate headway in Sacramento ↔ San Jose segment: 20 minutes peak/off-peak

#### SAN FRANCISCO ↔ SAN JOSE (Caltrain)

#### General Description and Markets Served

In Alternative 1, this service would be extended south from Gilroy to Salinas. The line would serve overlapping commuter markets into San Jose and San Francisco as well as regional travel between each terminus and principal points between. A mix of express and local service, with essentially balanced operations northbound and southbound during the peak periods, would be provided.

#### Corridors

- Peninsula Corridor (San Francisco ↔ San Jose)

- South Counties Corridors (San Jose ↔ Salinas)

### Stations

- Transbay Terminal – regional hub, transfer with BART, MUNI LRT/bus
- 4th & Townsend, SF – existing hub & northern terminus; transfer with MUNI LRT/bus
- 22nd Street, SF
- Bayshore, SF
- South San Francisco
- San Bruno
- Millbrae – express station; transfer with BART
- Burlingame
- San Mateo
- Hayward Park
- Hillsdale – express station
- Belmont
- San Carlos
- Redwood City – transfer with Dumbarton Rail
- Menlo Park – transfer with Dumbarton Rail
- Palo Alto – express station
- California Avenue
- San Antonio
- Mountain View – express station
- Sunnyvale
- Lawrence
- Santa Clara – transfer with BART, SJC Airport People Mover
- College Park
- San Jose Diridon – terminus for some trains; regional hub; transfer with Capitol Corridor, ACE, BART & Santa Clara Valley LRT
- Tamien – transfer with Santa Clara Valley LRT
- Capitol
- Blossom Hill
- Morgan Hill
- San Martin
- Gilroy – transfer with Hollister shuttle
- Pajaro – transfer with Santa Cruz↔Monterey service
- Castroville – transfer with Santa Cruz↔Monterey service
- Salinas

### Service Description

Alternative 1 would have a simplified operating plan, featuring only local and express service with convenient transfers at the express stations. Further infrastructure and equipment improvements would decrease travel times as compared to the Baseline.

- Salinas ↔ San Francisco (4th & Townsend), local:  
105 mile route, 159 minute schedule, 40 mph average speed.  
Trains would operate at 40 minute headways in the peak hours and 80 minute headways off-peak, in both directions.

- Salinas ↔ San Francisco (Transbay Terminal), local:  
106 mile route, 164 minute schedule, 39 mph average speed.  
Trains would operate at 25 minute headways in the peak hours and 45 minute headways off-peak, in both directions.
- San Jose ↔ San Francisco (4th & Townsend), express:  
44 mile route, 52 minute schedule, 52 mph average speed.  
Trains would operate at 40 minute headways in the peak hours and 80 minute headways off-peak, in both directions.
- San Jose ↔ San Francisco (Transbay Terminal), express:  
45 mile route, 56 minute schedule, 48 mph average speed.  
Trains would operate at 25 minute headways in the peak hours and 45 minute headways off-peak, in both directions.
- Average aggregate headway between San Jose and San Francisco: approximately 7½ minutes during peak periods and 15 minutes off-peak.

## SANTA CRUZ ↔ MONTEREY VIA PAJARO

### General Description and Markets Served

This “wharf to wharf” service would operate between Santa Cruz and Monterey via Watsonville. The Parajo and Castroville stations south of Watsonville would provide transfer points to services operating between Salinas and the Bay Area, thereby providing access from Monterey, Salinas and points between to trains operating to and from San Jose and points north. Schedules would be coordinated at Pajaro and Castroville to provide convenient connections to and from corridor trains.

In addition to weekday service there is a potential weekend visitor-oriented travel market.

The line would operate with single or multiple DMU equipment compatible with freight to maintain service to bulk cargo generators such as the rock quarry operations in Davenport (north of Santa Cruz).

### Corridors

- South Counties Corridors (Santa Cruz ↔ Monterey)

### List of Stations

- Union Street/Santa Cruz CBD – northern terminus
- Santa Cruz Wharf
- Seabright
- 17th Avenue (Live Oak area)
- 41st Avenue (Live Oak area)
- Capitola
- North Brighton/Cabrillo College
- Aptos Village
- Seascape

- Watsonville
- Pajaro – scheduled transfer with corridor trains
- Castroville – scheduled transfer with corridor trains
- Marina
- CSU Monterey Bay
- Seaside
- Monterey – southern terminus

#### Service Description

- Santa Cruz ↔ Monterey:  
47 mile route; 116 minute schedule; average speed 25 mph.  
Trains would operate in both directions at 60 minute headways during peak periods, and 120 minute headways during off-peak periods.

### GILROY ↔ HOLLISTER

#### General Description and Markets Served

This shuttle service would connect Hollister to the regional rail system. Schedules would be coordinated at Gilroy to provide convenient connections to and from corridor trains.

#### Corridors

- South Counties Corridors (Gilroy ↔ Hollister)

#### List of Stations

- Gilroy – scheduled transfer with corridor trains
- Hollister

#### Service Description

- Gilroy ↔ Hollister:  
14 mile route; 21 minute schedule; average speed 40 mph.  
Trains would operate in both directions at 60 minute headways peak/off-peak.

### DUMBARTON RAIL

#### General Description and Markets Served

This service would continue to operate across a reconstructed Dumbarton Rail Bridge, connecting the existing Caltrain and Capitol Corridor services. The Silicon Valley and San Francisco commuter markets would be served.

#### Corridors

- Transbay Corridor (Dumbarton Bridge)
- Peninsula Corridor (Millbrae ↔ San Jose)

Stations*Union City ↔ Millbrae service:*

- Union City – transfer with BART, Capitol Corridor, Oakland ↔ Merced service
- Fremont (Centerville) – transfer with Capitol Corridor, ACE
- Newark
- Menlo Park (Chilco Street)
- Redwood City
- San Carlos
- Belmont
- Hillsdale
- Hayward Park
- San Mateo
- Burlingame
- Millbrae – transfer with BART

*Union City ↔ San Jose service:*

- Union City – transfer with BART, Capitol Corridor, Oakland ↔ Merced service
- Fremont (Centerville) – transfer with Capitol Corridor, ACE
- Newark
- Menlo Park (Chilco Street)
- Menlo Park (Caltrain)
- Palo Alto
- California Avenue
- San Antonio
- Mountain View
- Sunnyvale
- Lawrence
- Santa Clara – transfer with BART, SJC Airport People Mover
- College Park
- San Jose Diridon – terminus for some trains; regional hub; transfer with Capitol Corridor, ACE, BART, Santa Clara Valley LRT

Service Description

Service would be expanded to operate in both directions between Union City and Millbrae and Union City and San Jose during peak periods:

- Union City ↔ Millbrae:  
28 mile route; 54 minute schedule; 32 mph average speed.  
Westbound trains would operate at 30 minute headways during the AM peak period and at 60 minute headways during the PM peak period; eastbound trains would operate at 60 minute headways during the AM peak period and at 30 minute headways during the PM peak period.
- Union City ↔ San Jose:  
36 mile route; 64 minute schedule; 34 mph average speed.  
Westbound trains would operate at 30 minute headways during the AM peak period and at 60 minute headways during the PM peak period; eastbound trains would operate at 60

minute headways during the AM peak period and at 30 minute headways during the PM peak period.

## CENTRAL VALLEY SERVICES (Amtrak San Joaquins)

### General Description and Markets Served

This service would continue to operate between Oakland and Bakersfield and Sacramento and Bakersfield; however, trains to/from Sacramento would be routed on the UPRR tracks south of Stockton to serve Manteca and Modesto.

### Corridors

- Central Valley Corridors (Sacramento ↔ Merced)
- I-80 Corridor (Oakland ↔ Martinez)
- East County Corridors (Martinez ↔ Stockton)
- East Bay / I-880 Corridor (Oakland ↔ Fremont)
- Tri-Valley Corridor (Fremont ↔ Lathrop/Manteca)

### Stations (stations south of Merced not listed)

#### *Oakland ↔ Merced via Martinez and Stockton (BNSF) service:*

- Oakland Jack London Square – regional hub; transfer to BART, Capitol Corridor service
- West Oakland – transfer with BART
- Emeryville – transfer with San Francisco buses
- Richmond – transfer with BART, San Rafael express buses
- Hercules
- Martinez – transfer with BART, Capitol Corridor service
- Antioch
- Stockton (San Joaquin Street)
- Escalon – new station
- Modesto (BNSF)
- Denair
- Merced

#### *Oakland ↔ Merced via Fremont and Manteca (UPRR) service:*

- Oakland Jack London Square – regional hub; transfer to BART
- Oakland Coliseum – transfer with BART
- Hayward
- Union City – transfer with BART, Dumbarton Rail
- Pleasanton – transfer with BART
- Livermore
- Greenville Road – transfer with BART (relocated Vasco Road Station), Pittsburg express bus
- Tracy – transfer with ACE, eBART
- Lathrop/Manteca
- Salida – new station
- Modesto (UPRR) – new station
- Turlock
- Merced

*Sacramento ↔ Merced via Stockton (UPRR) service:*

- Sacramento – regional hub; transfer with Sacramento LRT, Capitol Corridor
- Sacramento University/65th Street – new station; transfer with Sacramento LRT
- Elk Grove – new station
- Lodi
- Stockton (Cabral)
- Lathrop/Manteca
- Salida – new station
- Modesto (UPRR) – new station
- Turlock
- Merced

Service Description (service south of Merced not included)

Alternative 1 would include the following trains:

- Oakland ↔ Merced via Martinez and Stockton (BNSF):  
139 mile route; 157 minute schedule; 53 mph average speed.  
Trains would operate in both directions at 90 minute headways throughout the day.
- Oakland ↔ Merced via Fremont and Manteca (UPRR):  
128 mile route; 157 minute schedule; 49 mph average speed.  
Trains would operate in both directions at 60 minute headways throughout the day.
- Sacramento ↔ Merced via Stockton (UPRR):  
122 mile route, 149 minute schedule, 49 mph average speed.  
Trains would operate in both directions at 60 minute headways throughout the day.

**SACRAMENTO ↔ SAN JOSE VIA ALTAMONT (Altamont Commuter Express - ACE)**General Description and Markets Served

This service would continue to connect the San Joaquin Valley and Tri-Valley with Silicon Valley, but would be extended north to Sacramento.

Corridors

- Central Valley Corridors (Sacramento ↔ Lathrop/Manteca)
- Tri-Valley Corridor (Lathrop/Manteca ↔ Fremont)
- East Bay / I-880 Corridor (Fremont ↔ San Jose)

Stations

- Sacramento – regional hub; transfer with Sacramento LRT, Capitol Corridor
- Sacramento University/65th Street – transfer with Sacramento LRT
- Elk Grove
- Lodi
- Stockton (Cabral)
- Lathrop/Manteca
- Tracy – transfer with eBART, San Joaquin service



- Greenville Road – transfer with BART (relocated Vasco Road Station), Pittsburg express bus
- Livermore
- Pleasanton – transfer with BART
- Fremont (Centerville) – transfer with Capitol Corridor, Dumbarton Rail
- Great America
- Santa Clara – transfer with BART, SJC Airport People Mover
- San Jose Diridon – regional hub; transfer with Capitol Corridor, BART, Dumbarton Rail, Santa Clara Valley LRT

### Service Description

The current operating plan would be expanded to provide off-peak and bidirectional service:

- Sacramento ↔ San Jose:  
137 mile route; 186 minute schedule; 44 mph average speed.  
Westbound trains would operate at 30 minute headways during the AM peak period and at 60 minute headways midday and during the PM peak; eastbound trains would operate at 60 minute headways during the AM peak and midday, and at 30 minute headways during the PM peak period.

### EAST COUNTY ↔ CENTRAL VALLEY (eBART)

#### General Description and Markets Served

Baseline service would be extended beyond Byron to reach Patterson, allowing Central Valley commuters to reach the Highway 4 Corridor. An express bus would operate on Vasco Road between eastern Contra Costa County and Livermore.

#### Corridors

- East County Corridors (Pittsburg ↔ Patterson)

#### Stations

- Pittsburg/Bay Point – transfer with existing BART system, Livermore express bus
- Somersville Town Center
- Hillcrest Avenue
- Empire Avenue
- Central Boulevard
- Byron
- Mountain House
- Tracy – transfer with ACE, Oakland↔Merced service
- Vernalis
- Patterson

#### Express Bus

- Pittsburg/Bay Point – transfer with BART
- Pittsburg

- Antioch
- Greenville Road – transfer with BART and ACE

### Service Description

Service would be operated between Pittsburg/Bay Point and Patterson in both directions throughout the day:

- Pittsburg/Bay Point ↔ Patterson:  
63 mile route; 101 minute schedule; 37 mph average speed.  
Trains would operate at 12 minute headways in both directions throughout the day.

Service would be operated between Pittsburg/Bay Point and Greenville Road in both directions throughout the day:

- Pittsburg/Bay Point ↔ Greenville Road via Vasco Road Express Bus:  
40 mile route; 53 minute schedule; 45 mph average speed.  
Buses would operate southbound at 30 minute headways during the AM peak period and at 60 minute headways midday and during the PM peak; buses would operate northbound at 30 minute headways during the PM peak and 60 minute headways during the AM peak and midday.

## ALTERNATIVE 2

US 101 NORTH CORRIDOR (Cloverdale ↔ Larkspur, Sonoma-Marín Area Rail Transit)

### General Description and Markets Served

This service would provide an alternative to US 101 between Sonoma and Marin counties. Commuter markets to Santa Rosa, Petaluma and San Rafael would be served. In Alternative 2 service would be expanded, crossing San Francisco Bay to reach Richmond, Martinez, and Stockton. This service would take over the Oakland–Stockton branch of the existing San Joaquin and would be routed into Stockton's Cabral station. The San Joaquin Street station would be closed.

### Corridors

- US 101 North Corridor (Cloverdale ↔ Larkspur)
- I-80 Corridor (Richmond ↔ Martinez)
- East County Corridors (Martinez ↔ Stockton)

### Stations

- Cloverdale
- Healdsburg
- Windsor
- Jennings Road
- Santa Rosa
- Rohnert Park
- Cotati
- Corona Road
- Petaluma
- Novato North
- Novato South – transfer with North Bay service
- Civic Center
- San Rafael – transfer with San Francisco/Daly City express bus
- Larkspur
- San Quentin – new station, transfer with San Francisco ferry
- Richmond – transfer with BART, Capitol Corridor service
- Hercules
- Martinez
- Antioch
- Stockton (Cabral) – transfer with Sacramento↔Merced and Sacramento↔San Jose services

### Express Bus

- San Rafael – transfer with rail service
- Presidio – transfer with Muni LRT
- Geary/Park Presidio
- 19th/Judah, 19th/Taraval, Stonestown & SF State – transfer with Muni LRT

- Daly City – transfer with BART

#### Service Description

Service would be increased above the Baseline to include bidirectional service throughout the day:

- Cloverdale ↔ Larkspur:  
70 mile route; 92 minute schedule; 46 mph average speed.  
Southbound trains would operate at 30 minute headways during the AM peak period; and at 60 minutes midday and during the PM peak period. Northbound trains would operate at 60 minute headways during the AM peak period and midday, and at 30 minute headways during the PM peak period.
- Santa Rosa ↔ Stockton:  
112 mile route; 144 minute schedule; 47 mph average speed.  
Southbound trains would operate at 60 minute headways during the AM peak period; and at 120 minutes midday and during the PM peak period. Northbound trains would operate at 120 minute headways during the AM peak period and midday, and at 60 minute headways during the PM peak period.
- Resulting aggregate headway in Santa Rosa ↔ Larkspur segment: 20 minutes during peak periods, 40 minutes during off-peak periods.

Service would be operated between San Rafael and Daly City in both directions throughout the day:

- San Rafael ↔ Daly City Express Bus:  
23 mile route; 41 minute schedule; 34 mph average speed.  
Buses would be scheduled to meet trains with timed transfers at San Rafael.

### NORTH BAY SERVICES

#### General Description and Markets Served

These services would include a north-south line providing an alternative in the Highway 29 corridor, and an east-west line connecting Marin County to the Capitol Corridor. Commutes from Napa Valley to San Francisco would be served by an intermodal connection at the Vallejo Ferry Terminal.

In addition to weekday service, there is a potential weekend tourist market in Napa Valley.

#### Corridors

- North Bay Corridors (San Rafael ↔ Fairfield/Vacaville & Saint Helena ↔ Vallejo)

#### Stations

*San Rafael ↔ Fairfield/Vacaville line:*

- San Rafael – transfer to San Francisco/Daly City express bus

- Civic Center
- Novato South – transfer with SMART
- Lakeville Road
- Schellville
- Napa Junction – transfer with service to Saint Helena and Vallejo
- Red Top Road
- Suisun/Fairfield – transfer with Capitol Corridor service
- Fairfield/Vacaville – transfer with Capitol Corridor service

*Saint Helena ↔ Vallejo line:*

- Saint Helena – transfer with feeder bus to Calistoga
- Rutherford
- Yountville
- Napa North
- Napa Downtown
- Napa Valley College
- Napa Junction – transfer with service to San Rafael and Fairfield/Vacaville
- American Canyon
- Vallejo Sereno Drive
- Vallejo Ferry Terminal – transfer with ferries to San Francisco

Feeder Bus

- Calistoga
- Saint Helena – transfer with rail service to Vallejo

Service Description

Service would be provided on two lines intersecting at Napa Junction, where timed transfers would be facilitated. Service frequency would double as compared with Alternative 1:

- San Rafael ↔ Fairfield/Vacaville:  
51 mile route; 62 minute schedule; 49 mph average speed.  
Trains would operate at 30 minute headways in both directions throughout the day.
- Calistoga ↔ Saint Helena Feeder Bus:  
8 mile route; 15 minute schedule; 32 mph average speed.  
Buses would meet all trains to and from the Saint Helena rail terminal.
- Saint Helena ↔ Vallejo Ferry Terminal:  
33 mile route; 53 minute schedule; 37 mph average speed.  
Trains would operate at 30 minute headways in both directions throughout the day.

OAKLAND ↔ SAN JOSE

General Description and Markets Served

In Alternative 2, an express service would be operated between Oakland and San Jose on fully grade-separated tracks.

Corridors

- East Bay / I-880 Corridor (Oakland ↔ San Jose)

Stations

- West Oakland – new station; regional hub; transfer with Peninsula service and BART
- Oakland City Center – new station
- Oakland Coliseum – transfer with BART
- Union City – new station; transfer with BART, Dumbarton Rail
- Milpitas – transfer with Santa Clara Valley LRT
- Santa Clara – transfer with BART, Peninsula service, SJC Airport People Mover
- San Jose Diridon – regional hub; transfer with Peninsula service, BART, Dumbarton Rail, Santa Clara Valley LRT

Service Description

- A new alignment through Oakland would include two new stations: West Oakland and Oakland City Center, allowing transfers with Peninsula Corridor services and BART
- Oakland ↔ San Jose:  
44 mile route; 34 minute schedule; 77 mph average speed.  
Peak/off-peak headways of 30 minutes.

## GILROY ↔ SALINAS

General Description and Markets Served

In Alternative 2, service between Gilroy and Salinas would be operated as a shuttle, with coordinated schedules at Gilroy to provide convenient connections to and from corridor trains.

Corridors

- South Counties Corridors (San Jose ↔ Salinas)

Stations

- Gilroy – transfer with corridor trains
- Pajaro – transfer with Santa Cruz ↔ Monterey service
- Castroville – transfer with Santa Cruz ↔ Monterey service
- Salinas

Service Description

- Gilroy ↔ Salinas:  
29 mile route; 33 minute schedule; 53 mph average speed.  
Peak/off-peak headways of 60 minutes.

## SACRAMENTO ↔ SAN JOSE VIA SAN FRANCISCO (Caltrain)

General Description and Markets Served

In Alternative 2, full grade separation would be implemented between San Francisco and San Jose. Service south of Gilroy would be routed to Hollister rather than to Salinas, as in Alternative 1. A new transbay tube would be built and service extended along the Capitol Corridor. Express trains would operate between Sacramento and San Jose, and locals would operate between San Jose and Auburn, and between San Francisco and Hollister.

Corridors

- I-80 Corridor (Auburn ↔ Oakland)
- Transbay Corridors (Oakland ↔ San Francisco)
- Peninsula Corridor (San Francisco ↔ San Jose)
- South Counties Corridors (San Jose ↔ Hollister)

Stations

- Auburn
- Rocklin
- Roseville
- Swanston
- Sacramento – express station; regional hub; transfer with Sacramento LRT, San Joaquin and Sacramento↔Merced, Sacramento↔San Jose services
- Davis – express station
- Dixon – new station
- Fairfield/Vacaville – new station; express station; transfer with North Bay services
- Suisun/Fairfield – transfer with North Bay services
- Cordelia (Lopes Road) – new station
- Vallejo (I-80/Route 37) – new station; express station
- Hercules – new station
- Richmond – express station; transfer with BART, SMART
- Berkeley
- Emeryville – transfer with San Francisco bus service
- West Oakland – regional hub; transfer with BART, Dumbarton Rail and Oakland↔San Jose express services
- Transbay Terminal – regional hub, transfer with BART, MUNI LRT/bus
- 4th & Townsend, SF – existing hub & terminus; express station; transfer with MUNI LRT/bus
- 22nd Street, SF
- Bayshore, SF
- South San Francisco
- San Bruno
- Millbrae – express station; transfer with BART
- Burlingame
- San Mateo
- Hayward Park
- Hillsdale – express station
- Belmont
- San Carlos

- Redwood City – transfer with Dumbarton Rail
- Menlo Park – transfer with Dumbarton Rail
- Palo Alto – express station
- California Avenue
- San Antonio
- Mountain View – express station
- Sunnyvale
- Lawrence
- Santa Clara – transfer with BART, SJC Airport People Mover
- College Park
- San Jose Diridon – regional hub; transfer with Oakland↔San Jose Express, Sacramento↔San Jose service, BART, Santa Clara Valley LRT
- Tamien – transfer with Santa Clara Valley LRT
- Capitol
- Blossom Hill
- Morgan Hill
- San Martin
- Gilroy – transfer with Gilroy↔Salinas service
- Hollister

#### Service Description

- Service would be operated in a new alignment along I-80 between Hercules and Suisun/Fairfield via a new bridge crossing the Carquinez Strait (service to the existing Martinez station would be provided by trains operating between Stockton and Santa Rosa). The new alignment would include new stops at I-80/Route 37 in Vallejo and Lopes Road in Cordelia.

Express trains would operate between Sacramento and San Jose; local trains would operate between Auburn and San Jose, and San Francisco and Hollister:

- San Francisco ↔ Hollister, local:  
91 mile route, 130 minute schedule, 42 mph average speed.  
Trains would operate at 30 minute headways in the peak hours and 60 minute headways off-peak.
- San Jose ↔ Auburn via SF Transbay Terminal, local:  
169 mile route, 208 minute schedule, 49 mph average speed.  
Trains would operate at 30 minute headways in the peak hours and 60 minute headways off-peak, in both directions.
- San Jose ↔ Sacramento, express:  
128 mile route, 109 minute schedule, 71 mph average speed.  
Trains would operate at 15 minute headways in the peak hours and 30 minute headways off-peak.



## SANTA CRUZ ↔ MONTEREY VIA PAJARO

### General Description and Markets Served

This “wharf to wharf” service would operate between Santa Cruz and Monterey via Watsonville. The Parajo and Castroville stations just south of Watsonville would provide a transfer to services operating between Salinas and the Bay Area, thereby providing access from Monterey, Salinas and points between to trains operating to and from San Jose and points north. Schedules would be coordinated at Pajaro and Castroville to provide convenient connections to and from corridor trains.

In addition to weekday service there is a potential weekend visitor-oriented travel market.

The line would operate with single or multiple DMU equipment compatible with freight to maintain service to bulk cargo generators such as the rock quarry operations in Davenport (north of Santa Cruz).

### Corridors

- South Counties Corridors (US 101 South & Route 1)

### List of Stations

- Union Street/Santa Cruz CBD – northern terminus
- Santa Cruz Wharf
- Seabright
- 17th Avenue (Live Oak area)
- 41st Avenue (Live Oak area)
- Capitola
- North Brighton/Cabrillo College
- Aptos Village
- Seascape
- Watsonville
- Pajaro – scheduled transfer with corridor trains
- Castroville– scheduled transfer with corridor trains
- Marina
- CSU Monterey Bay
- Seaside
- Monterey – southern terminus

### Service Description

Service frequency would be doubled over Alternative 1:

- Santa Cruz ↔ Monterey:  
47 mile route; 116 minute schedule; average speed 25 mph.  
Trains would operate in both directions at 30 minute headways during peak periods, and 60 minute headways during off-peak periods.

## DUMBARTON RAIL

### General Description and Markets Served

This service would continue to operate across a new Dumbarton Rail Bridge, connecting the existing Caltrain and Capitol Corridor services. The Silicon Valley and San Francisco commuter markets would be served. Alternative 2 would extend service north from Union City to Oakland, east to Fresno over Altamont Pass, and north from Millbrae to San Francisco. Full grade separation would be implemented along the entire route.

### Corridors

- Central Valley Corridors (Sacramento ↔ Merced)
- Tri-Valley Corridor (Lathrop/Manteca ↔ Fremont)
- East Bay / I-880 Corridor (Oakland ↔ Fremont)
- Transbay Corridor (Dumbarton Bridge)
- Peninsula Corridor (San Francisco ↔ San Jose)

### Stations

#### *Merced ↔ San Francisco via Dumbarton:*

- Merced
- Turlock
- Modesto (UPRR)
- Salida
- Lathrop/Manteca
- Tracy – transfer with eBART
- Vasco Road
- Livermore (Isabel) – transfer with ACE, BART, Pittsburg express bus
- Pleasanton
- Fremont (Centerville) – transfer with Oakland↔San Jose via Dumbarton service
- Newark
- Redwood City
- Hillsdale
- Millbrae – transfer with BART
- 4th & Townsend – transfer with MUNI LRT/bus
- Transbay Terminal – regional hub, transfer with BART, MUNI LRT/bus

#### *West Oakland ↔ San Jose via Dumbarton:*

- West Oakland – regional hub; transfer with Peninsula service and BART
- Oakland City Center
- Oakland Coliseum – transfer with BART
- Hayward
- Union City – transfer with BART, Oakland↔San Jose Express
- Fremont (Centerville) – transfer with Merced↔San Francisco service
- Newark
- Menlo Park (Chilco Street)
- Menlo Park (Caltrain)
- Palo Alto
- California Avenue

- San Antonio
- Mountain View
- Sunnyvale
- Lawrence
- Santa Clara – transfer with BART, SJC Airport People Mover
- College Park
- San Jose Diridon – regional hub; transfer with ACE, BART & Santa Clara Valley LRT

### Service Description

Extended service between Fremont and Merced, Oakland and Union City, and Millbrae and San Francisco would be overlaid on the Alternative 1 trains to increase frequencies in the corridor core across the Dumbarton Bridge:

- Merced ↔ San Francisco via Dumbarton:  
142 mile route; 147 minute schedule; 58 mph average speed.  
Westbound trains would operate at 60 minute headways during the AM peak period and at 120 minute headways during the PM peak period; eastbound trains would operate at 120 minute headways during the AM peak period and at 60 minute headways during the PM peak period.
- Union City ↔ San Jose via Dumbarton:  
36 mile route; 51 minute schedule; 42 mph average speed.  
Westbound trains would operate at 60 minute headways during the AM peak period and at 120 minute headways during the PM peak period; eastbound trains would operate at 120 minute headways during the AM peak period and at 60 minute headways during the PM peak period.
- West Oakland ↔ San Jose via Dumbarton:  
57 mile route; 72 minute schedule; 48 mph average speed.  
Trains would operate at 60 minute peak/off-peak headways.

## SACRAMENTO ↔ FRESNO

### General Description and Markets Served

In Alternative 2, full grade separation would be implemented between Merced and Sacramento.

### Corridors

- Central Valley Corridors (Sacramento ↔ Merced)

### Stations

- Sacramento – regional hub; transfer with Sacramento LRT, Capitol Corridor
- Sacramento University/65th Street – transfer with Sacramento LRT
- Elk Grove
- Lodi
- Stockton (Cabral) – transfer to SMART, San Joaquin
- Lathrop/Manteca

- Salida
- Modesto (UPRR)
- Turlock
- Merced

### Service Description

Service frequencies from Alternative 1 would be maintained:

- Sacramento ↔ Merced via Stockton (UPRR):  
122 mile route, 120 minute schedule, 61 mph average speed.  
Trains would operate in both directions at 60 minute headways throughout the day.

SACRAMENTO ↔ SAN JOSE VIA ALTAMONT (Altamont Commuter Express - ACE)

### General Description and Markets Served

This service would connect Sacramento, the San Joaquin Valley and Tri-Valley with Silicon Valley, and the entire route would be grade-separated. The segment between Sacramento and Stockton would be operated as an express.

### Corridors

- Central Valley Corridors (Sacramento ↔ Lathrop/Manteca)
- Tri-Valley Corridor (Lathrop/Manteca ↔ Fremont)
- East Bay / I-880 Corridor (Fremont ↔ San Jose)
- South Counties Corridors (San Jose ↔ Hollister)

### Stations

- Sacramento – regional hub; transfer with Sacramento LRT, Capitol Corridor
- Stockton (Cabral) – transfer to SMART, San Joaquin
- Lathrop/Manteca
- Tracy – transfer with eBART
- Vasco
- Livermore (Isabel) – transfer with ACE, BART, Pittsburg express bus
- Pleasanton
- Irvington – transfer with BART, Oakland↔San Jose Express
- Milpitas – transfer with Santa Clara Valley LRT
- San Jose (North First Street) – transfer with Santa Clara Valley LRT
- Santa Clara – transfer with BART, Peninsula service, SJC Airport People Mover
- San Jose Diridon – regional hub; transfer with Peninsula service, BART, Dumbarton Rail & Santa Clara Valley LRT
- Tamien – transfer with Santa Clara Valley LRT
- Capitol
- Blossom Hill
- Morgan Hill
- San Martin
- Gilroy – transfer to Gilroy↔Salinas service
- Hollister

### Service Description

Service frequencies from Alternative 1 would be maintained:

- Sacramento ↔ Hollister:  
180 mile route; 166 minute schedule; 65 mph average speed.  
Westbound trains would operate at 30 minute headways during the AM peak period and at 60 minute headways midday and during the PM peak; eastbound trains would operate at 60 minute headways during the AM peak and midday, and at 30 minute headways during the PM peak period.

EAST COUNTY ↔ CENTRAL VALLEY (eBART)

EAST COUNTY ↔ TRI-VALLEY (express bus)

### General Description and Markets Served

Baseline service would be extended beyond Byron to reach Patterson and an express bus would operate on Vasco Road, as in Alternative 1. In the place of a BART line in Alternative 1, an express bus would operate in the I-680 corridor between Suisun City and Milpitas.

### Corridors

- East County Corridors (Pittsburg ↔ Patterson)
- I-680 Corridor (Suisun City ↔ Milpitas)

### Stations

- Pittsburg/Bay Point – transfer with existing BART system
- Somersville Town Center
- Hillcrest Avenue
- Empire Avenue
- Central Boulevard
- Byron
- Mountain House
- Tracy – transfer with ACE, San Francisco↔Merced service
- Vernalis
- Patterson

### Express Bus Stops

#### *Vasco Road Express Bus:*

- Pittsburg/Bay Point – transfer with BART
- Pittsburg
- Antioch
- Livermore
- Isabel Avenue – transfer with BART, ACE, San Francisco↔Merced service

#### *I-680 Express Bus*

- Suisun City – transfer with Capitol Corridor

- Fairfield Transit Center
- Cordelia (Lopes Road) – transfer with Capitol Corridor
- Martinez
- Pleasant Hill – transfer with BART
- Dublin/Pleasanton – transfer with BART
- Pleasanton – transfer with ACE, San Francisco↔Merced service
- Irvington – transfer with BART, Oakland↔San Jose service
- Calaveras – transfer with BART
- I-880/Milpitas – transfer with VTA light rail

#### Service Description

Service would be operated between Pittsburg/Bay Point and Tracy in both directions throughout the day:

- Pittsburg/Bay Point ↔ Patterson:  
63 mile route; 101 minute schedule; 37 mph average speed.  
Trains would operate at 12 minute headways in both directions throughout the day.

Service would be operated between Pittsburg/Bay Point and Dublin/Pleasanton in both directions throughout the day:

- Pittsburg/Bay Point ↔ Isabel Avenue via Vasco Road Express Bus:  
46 mile route; 61 minute schedule; 45 mph average speed.  
Buses would operate southbound at 30 minute headways during the AM peak period and at 60 minute headways midday and during the PM peak; buses would operate northbound at 30 minute headways during the PM peak and 60 minute headways during the AM peak and midday.

Service would be operated between Suisun City and Milpitas in both directions throughout the day:

- Suisun City ↔ Milpitas via I-680 Express Bus:  
80 mile route; 107 minute schedule; 45 mph average speed.  
Buses would operate at 30 minute headways during the peak periods and at 60 minute headways midday, in both directions.

**ATTACHMENT B  
HIGH SPEED RAIL OVERLAY SERVICES**

Alternative 2 includes higher-speed passenger services operating on dedicated tracks on principal corridors throughout the region. Most of the alignments shown in Alternative 2 are the same as those designated by the California High Speed Rail Authority for access to the inner Bay Area cities and Sacramento. It is the intention of Alternative 2 to test the market potential for travel between regional stops within the regional rail Northern California study area. If provided along the high speed rail network, regional “overlay” services could potentially operate along high speed rail lines using compatible equipment. In order to operate such services, additional investments in track, signal and stations would need to be provided including provision of 4-track stations with express and local (platform) tracks and sidings long enough to allow regional trains to decelerate and accelerate into and out of regional stations without significant impact to statewide trains.

The listings below indicate candidate stops by corridor along with potential lines. It should be noted that, as the corridors include major junctions and certain lines operate in more than one corridor, not all stops within each corridor are served by all trains.

**US 101 Corridor (San Francisco to Hollister)****Stops:**

- San Francisco (Transbay Transit Center)
- San Francisco (4<sup>th</sup> / Townsend)
- Millbrae/SFO
- San Mateo
- Redwood City
- Palo Alto
- Mountain View
- Santa Clara/SJC
- San Jose Diridon
- Morgan Hill
- Gilroy

**Lines:**

- San Francisco – Hollister
- Merced – San Francisco via Altamont & Dumbarton
- Auburn – San Jose via San Francisco<sup>7</sup>

**East Bay (Oakland to San Jose)****Stops:**

- West Oakland BART
- Downtown Oakland (Broadway & 7<sup>th</sup> Street)
- Oakland Coliseum/OAK

---

<sup>7</sup> This line would operate with HST compatible equipment on the Peninsula trackage as well as new separate regional trackage in the I-80 corridor between San Francisco and Auburn

- Hayward
- Union City
- I-880/Tasman
- North First/Trimble
- Santa Clara/SJC
- San Jose Diridon

#### Lines

- Oakland – San Jose via East Bay
- Oakland – San Jose via Dumbarton
- Sacramento – San Jose via Altamont

#### Tri-Valley / Altamont / Dumbarton Corridor

#### Stops

- Tracy
- Livermore
- Pleasanton
- Fremont (Centerville)
- Newark

#### Lines

- Sacramento – San Jose via Altamont
- Merced – San Francisco via Altamont & Dumbarton
- Oakland – San Jose via Dumbarton

#### Central Valley Corridor

#### Stops

- Sacramento Valley
- 65<sup>th</sup> / Sacramento State University
- Elk Grove
- Lodi
- Stockton
- Manteca
- Modesto
- Turlock
- Merced

#### Lines

- Sacramento – San Jose via Altamont
- Merced – San Francisco via Altamont & Dumbarton
- Sacramento – Merced



## **ATTACHMENT C BART SYSTEM REFINEMENTS**

### **OVERVIEW**

This technical memorandum summarizes the refinements to Regional Rail Alternatives with respect to the BART system.

Topics addressed include:

- BART Visions
- BART Refinements
- Systemwide Study Alternatives
- 4<sup>th</sup> Oakland Track and New Transbay Tube
- Analysis of “X” Operating Plan
- Baseline and Core Capacity Needs

### **BART VISIONS**

The initial conceptual alternatives incorporated three alternative “visions” for evolution of the BART system:

- Regional Expansion – BART is expanded using classic BART technology (compatible with the existing gauge, vehicles and systems) to serve as the regional rail provider
- Mass Transit – BART is not expanded but additional stations are added and BART becomes more of a mass transit provider. Were appropriate, express and local services are provided.
- Core Capacity – The BART system remains largely as it is today, with the exception of minor extensions or additional stations needed to provide connectivity. Investments are focused on Core Capacity needs as a result of growing regional demands on the system.

### **CORE CAPACITY INVESTMENTS**

The BART system will require on-going investments to facilities and rolling stock to continue to provide a high quality of service to customers. These costs will be incurred regardless of any system expansion or growth in patronage. As such, these costs will be estimated separately from those associated with a particular alternative.

#### **BART Vehicle Needs:**

Total of 669 rail vehicles will need to be replaced or renovated in next 16 years 2/3 of BART rail vehicles must be replaced (A and B cars) by no later than 2018. Likely start year of new vehicle procurement is 2015 (8-year program). Inventory of existing BART fleet:

- A and B cars acquired c. 1972 and refurbished in 1990s
- 59 A-2 Cars (replace 2016-2018)
- 380 B-2 Cars (replace 2014-2018)
- C cars acquired between 1985 and 1995
- 150 C-1 Cars (refurbish/upgrade 2012-2015)
- 80 C-2 Cars (refurbish/upgrade 2021-2022)

New cars will likely include the following features and benefits:

- Seating modifications to allow greater flow of passengers
- 3-Doors to reduce dwell times and speed boarding and alighting
- Electronic address system and more overall "Metro-like" features

Short-term: modifications of existing BART cars for improved interior flow and storage (cost: \$7 million)

Short-term renovation of existing Vehicle Automatic Train Control (VATC) aboard lead and trail cars (cost: \$64 million)

Strategic maintenance program (cost: \$115 million)

As a last component of the vehicle program, the C-Car fleet will be likely be refurbished and interior design/access made consistent with new fleet (cost: \$230 million)

Total Costs of fleet replacement: \$2.1 billion

Total Costs of entire BART vehicle program (2006-2036): **\$2.52 billion**

### Preserving Capital Investment

Preservation of existing capital facilities and infrastructure includes investment in the tracks, yards, computer systems, stations, shops and work equipment.

#### *Track, Signal and Mainline Facility Needs:*

##### Mainline – Track and Wayside Facilities

- Timbers and ties
- Rail and fasteners
- Traction power systems (TPS) such as transformers, substations, and associated cabling
- Ventilation systems
- Fire suppression/access
- Fencing

Total Costs: \$1.03 Billion (approximately \$20 to \$45 million per year)

#### *Communications, FCE and Central Control Needs:*

- Network Hardware
- Cabling

- Fare Collection Equipment / Automated Fare Collection
- Train Control Systems
- Communications & Dispatching Systems (ICS/DSS and Central)

Total Costs: \$900 million (approximately \$15 to \$40 million per year)

Shops and facilities (cost: \$89 million)

Capital preservation program (cost: \$100 million per year)

Total Costs for Preserving Capital Investment: **\$2.8 billion**

#### Mandatory Capacity Modifications

In addition to capital needs to maintain service reliability of the existing elements of the system, additional investments are estimated to address anticipated growth in patronage and utilization of rolling stock, facilities and systems over the next 30 years. Deemed as “mandatory capacity improvements”, the following is estimated:

*Station Capacity Investments:* \$625 million

- Additional stairs and escalators
- Additional fare gates

*Vehicle/Shop/Yard Improvements:* \$50 million

- Storage tracks
- Shop expansion

*System Investments:* \$182 million

- Track improvements
- Crossovers
- Traction power
- Ventilation

*Station Access:* \$800 million

- Parking
- Intermodal facilities

*Additional Vehicles and Storage Tracks:* \$650 million

- New cars
- Storage for new cars when not in revenue service

Total mandatory capacity improvements: **\$2.3 billion**

#### Quality Enhancement Investments and System Security

New investments in station amenities and employee facilities that significantly enhance system quality (cost: **\$150 million**)

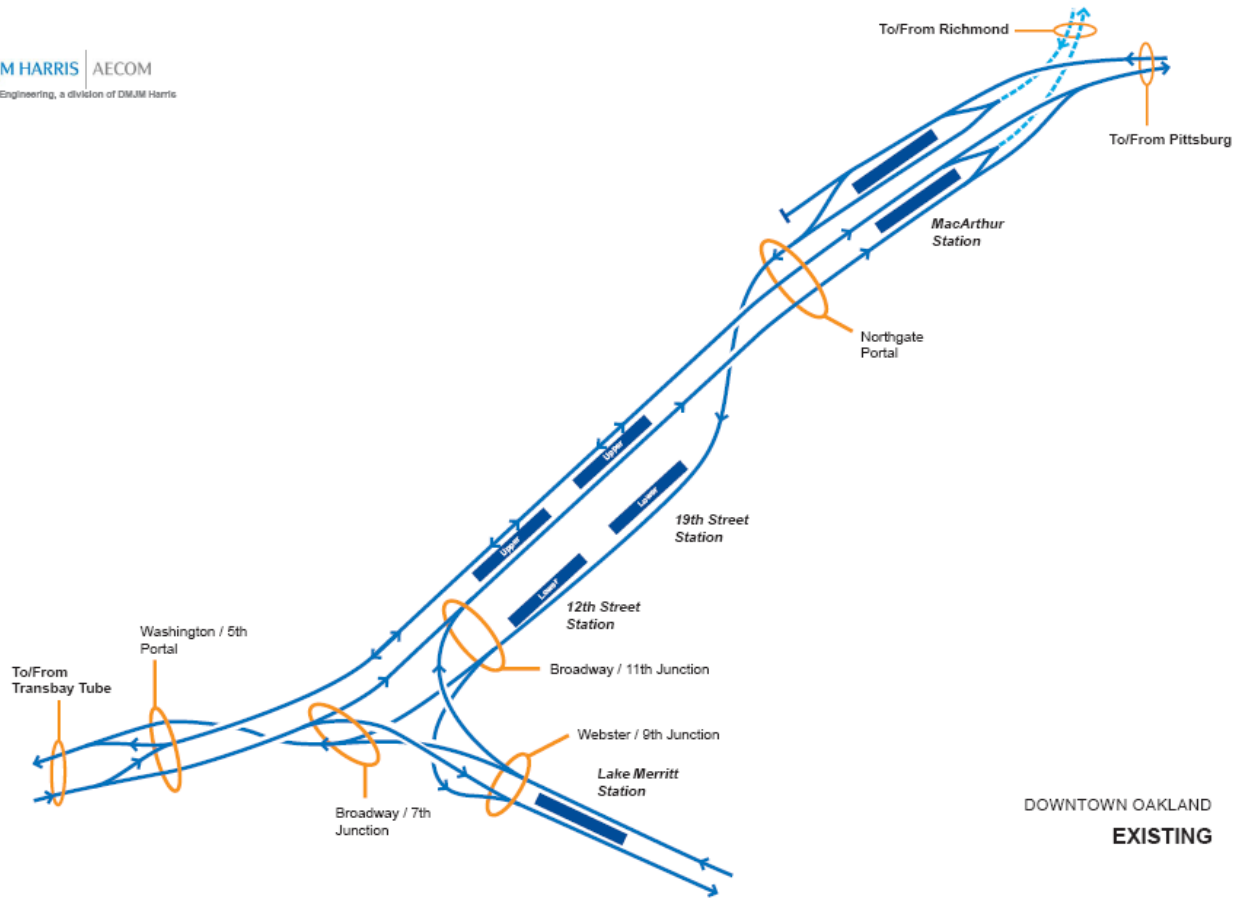
System security investments (cost: **\$250 million**)

**EXHIBITS**

- Exhibit 1 – Existing Wye
- Exhibit 2 – 4th Track
- Exhibit 3 – 4th Track plus Breakout for New Tube
- Exhibit 4 – Oakland Cross-Platform Transfer Opportunities with 4th Track
- Exhibit 5 – BART Inbound Ridership (2005 AM Peak Period)
- Exhibit 6 – BART Line Options with New Tube & 4th Track
- Exhibit 7 – New SF Subway (Option 1.a)
- Exhibit 8 – New SF Subway (Option 1.b)

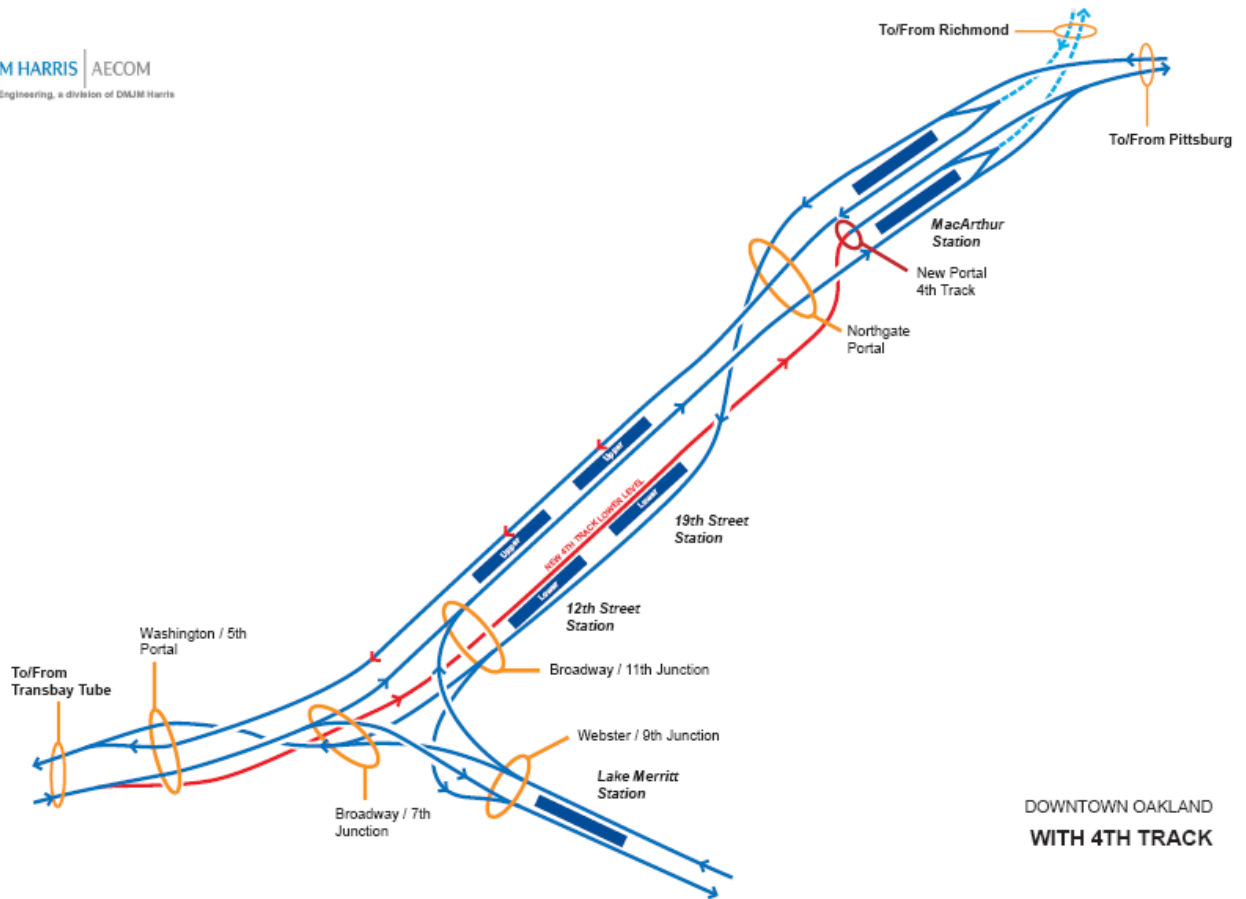
## Exhibit 1

DMJM HARRIS | AECOM  
Korve Engineering, a division of DMJM Harris



## Exhibit 2

DMJM HARRIS | AECOM  
Korve Engineering, a division of DMJM Harris



## Exhibit 3

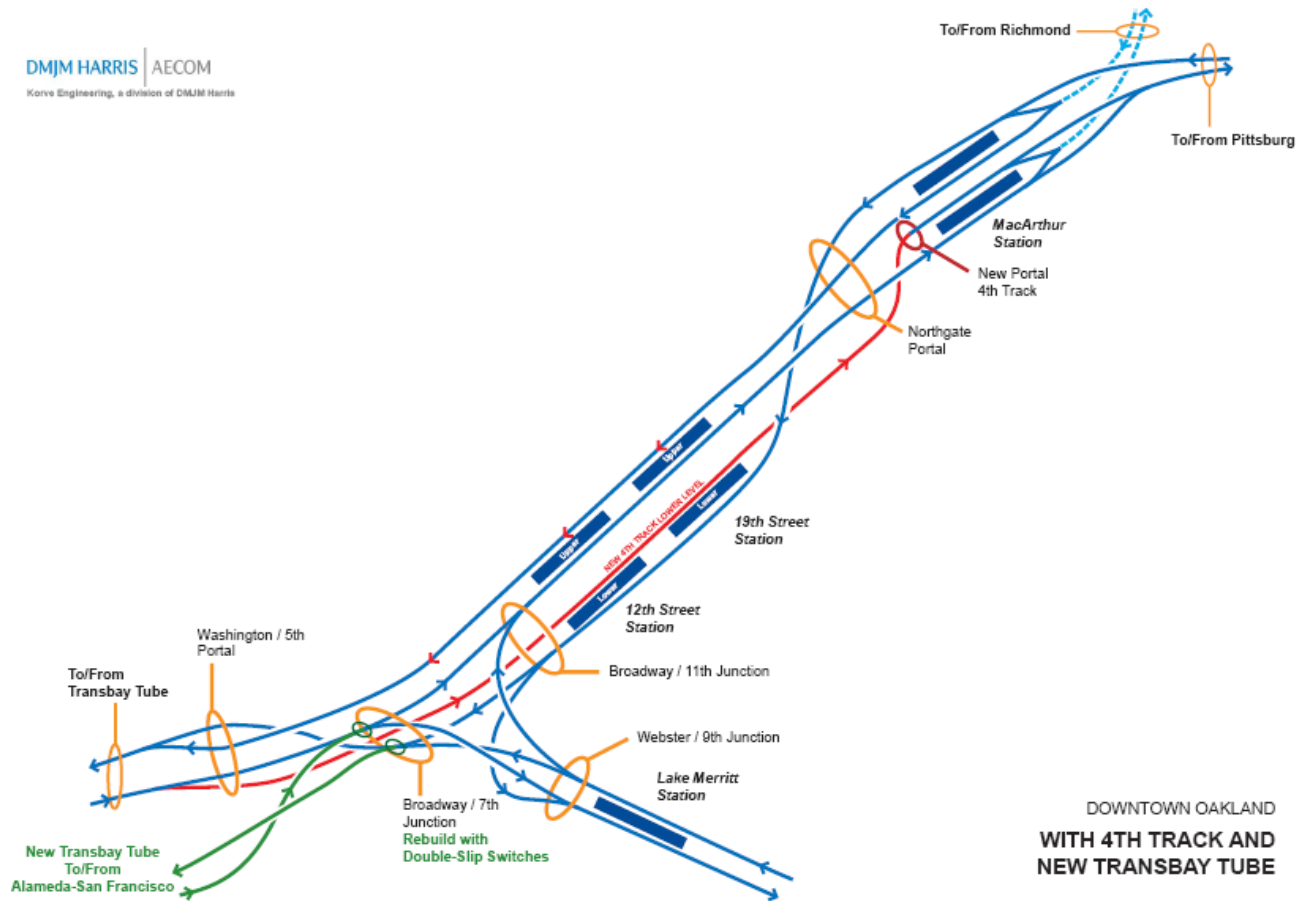


Exhibit 4



SUBJECT BART TRANSFER OPPORTUNITIES JOB NUMBER B. Ogden  
CROSS-PLATFORM w/ 4TH TRACK SHEET NUMBER OF  
 MADE BY DATE CHECKED BY DATE 12/28/06  
NEW TUBE (ALAMEDA-SF)

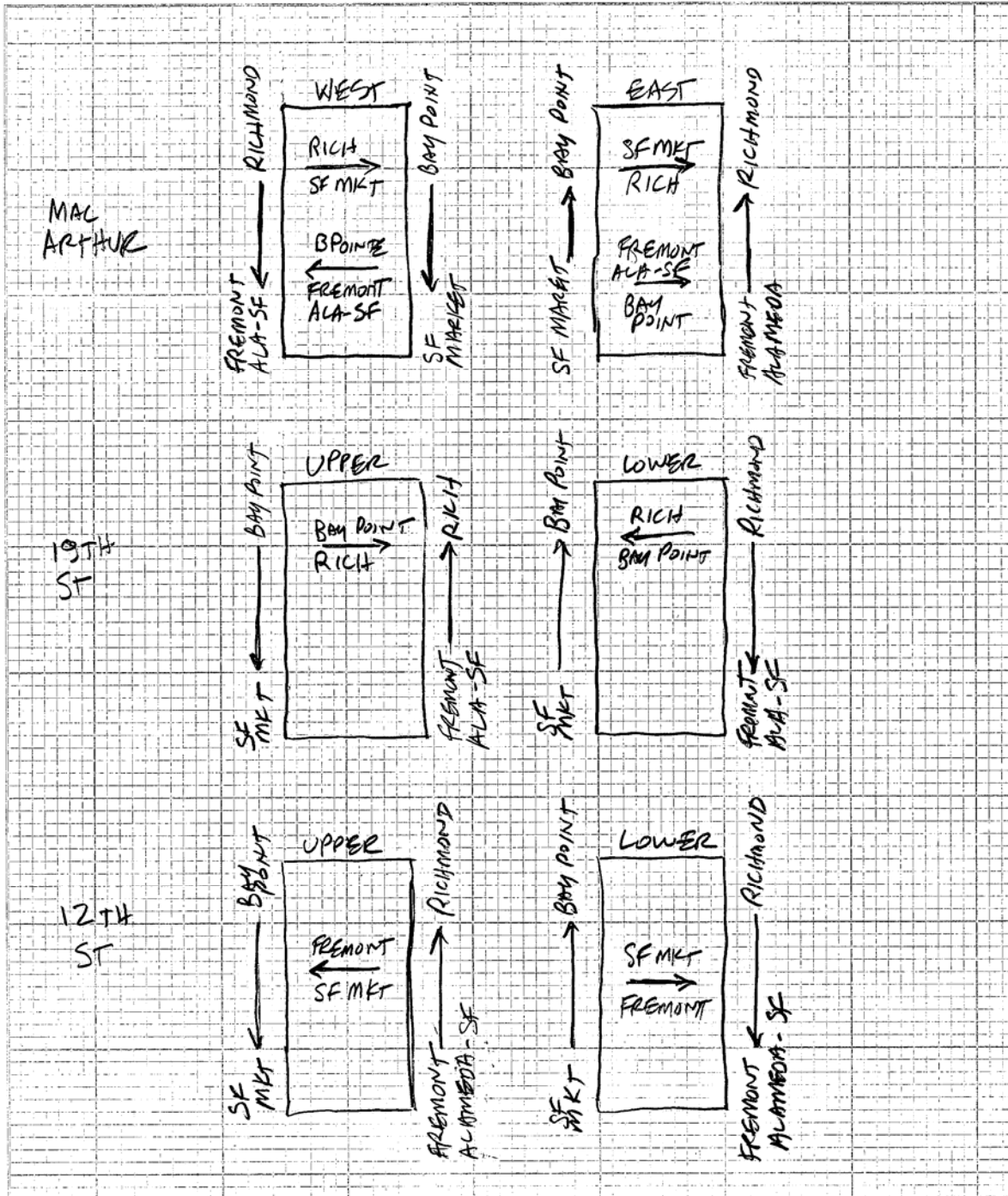




Exhibit 5

DMJM HARRIS | AECOM

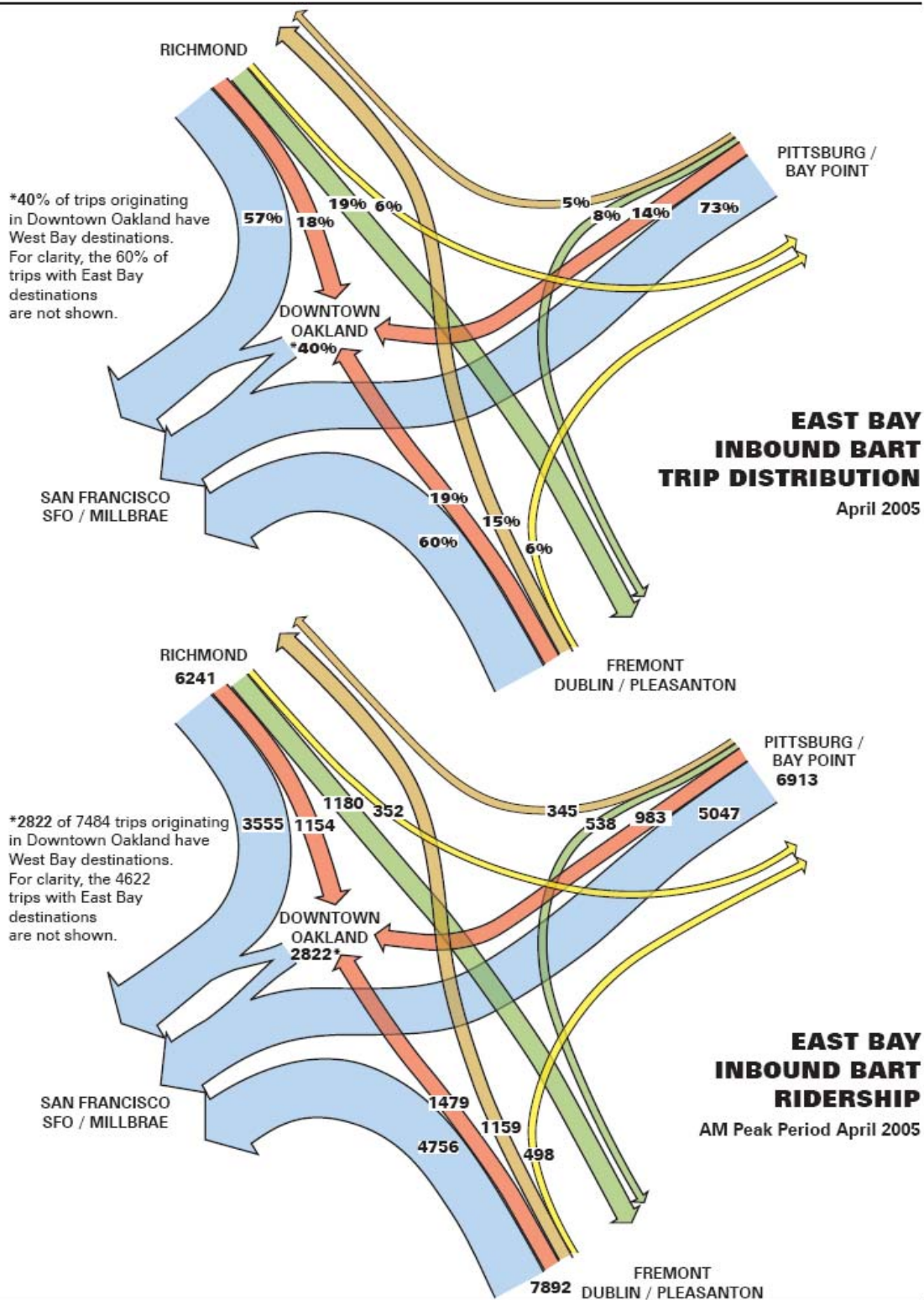
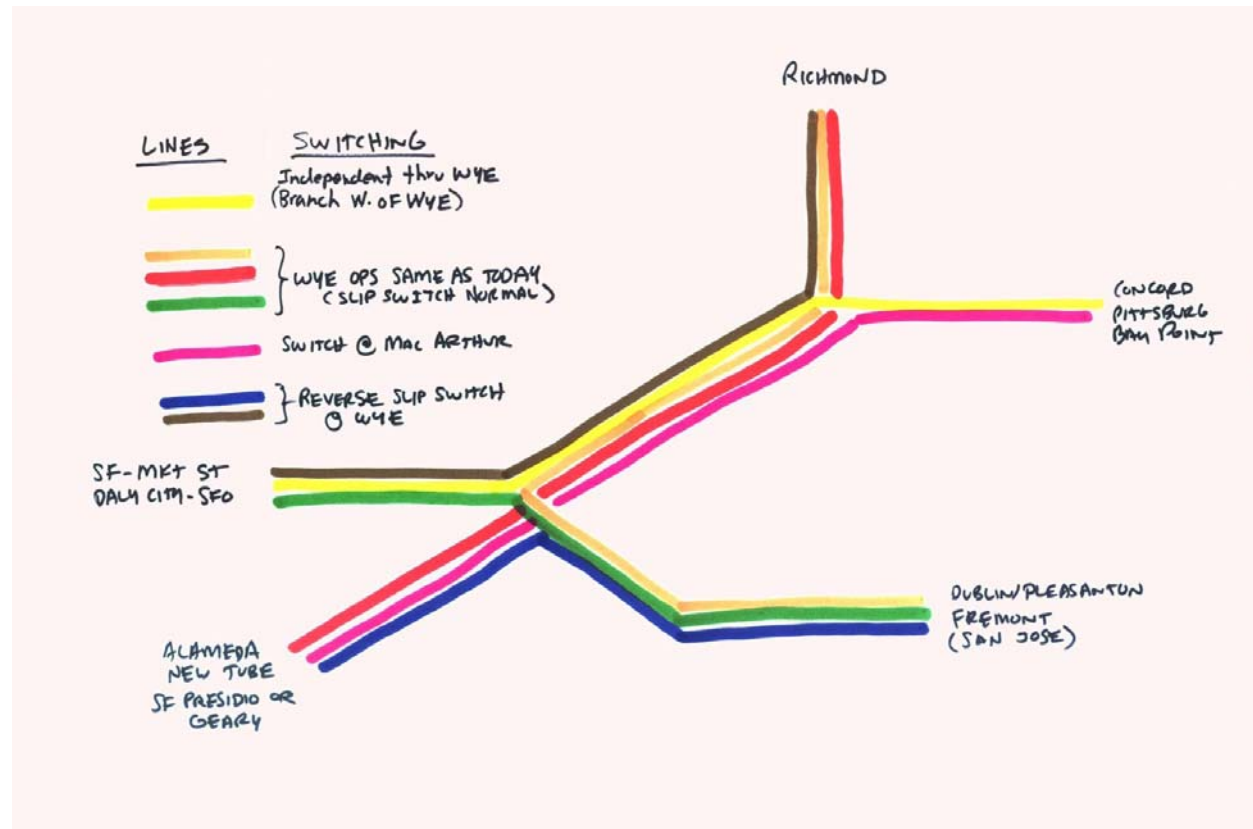
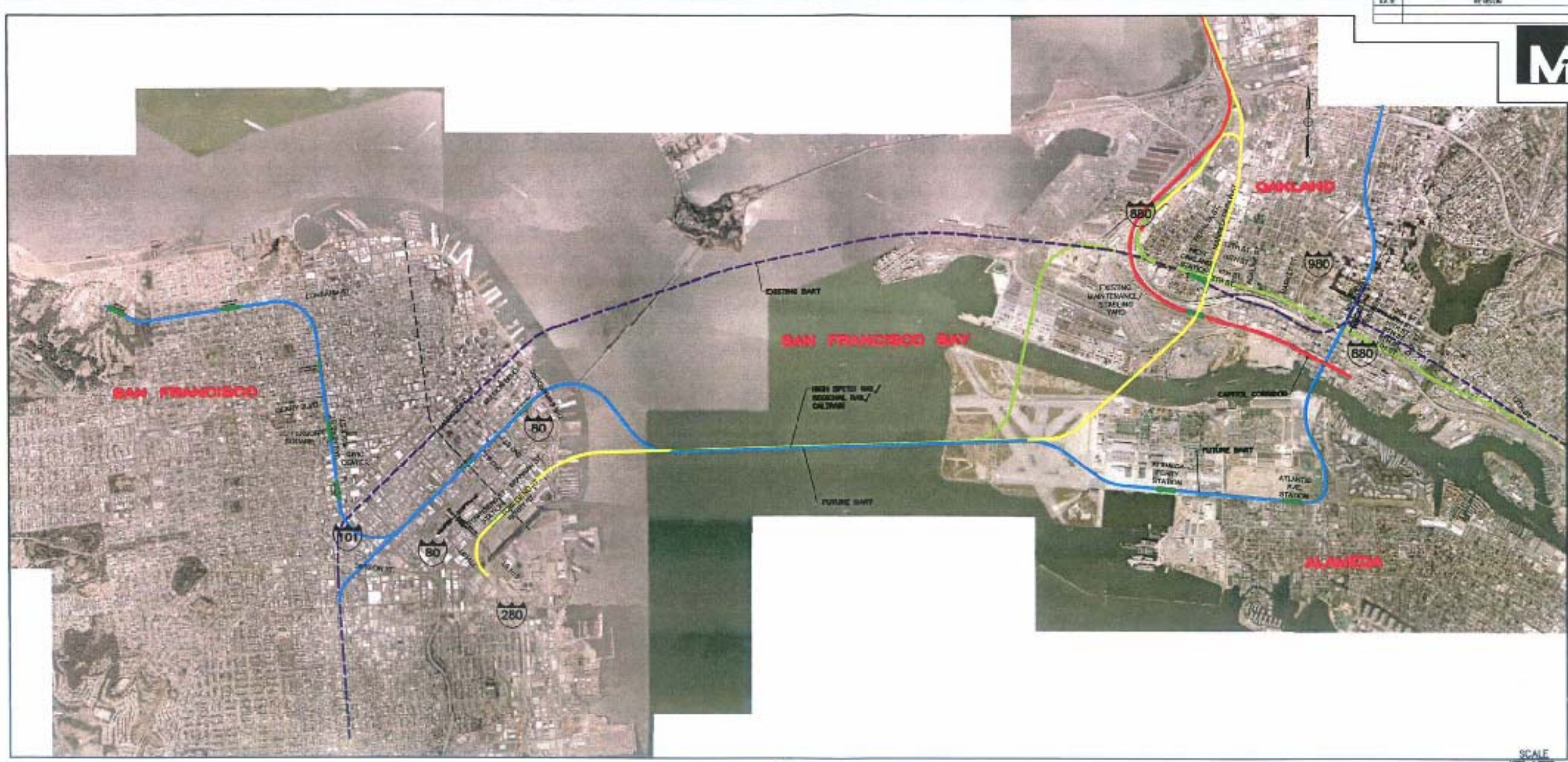


Exhibit 6







SHEET SF000  
DATE 01-30-07

**BAY AREA - BAY CROSSING  
BART OPTION 2  
OAKLAND TO SAN FRANCISCO**

CALIFORNIA HIGH-SPEED TRAIN PROGRAM ENVIRONMENTAL IMPACT REPORT / ENVIRONMENTAL IMPACT STATEMENT



PLAN

SCALE  
1" = 1 MILE





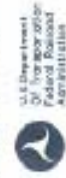
2015 PLAN AND CONCEPT LINE AND STATION TOTALS

PLAN

DATE	REVISION



**BAY AREA - BAY CROSSING**  
**BART OPTION 2**  
**GEARY/VAN NESS/FOLSOM STS.**  
 CALIFORNIA HIGH-SPEED TRAIN PROGRAM ENVIRONMENTAL IMPACT REPORT / ENVIRONMENTAL IMPACT STATEMENT



SHEET BARTSF2  
 DATE 01-09-07  
 SCALE 1" = 1 MILE





**BAY AREA - BAY CROSSING**

**BART OPTION 1**

**OAKLAND TO SAN FRANCISCO**

CALIFORNIA HIGH-SPEED TRAIN PROGRAM / ENVIRONMENTAL IMPACT REPORT / ENVIRONMENTAL IMPACT STATEMENT

**U.S. Department of Transportation**

**U.S. Department of the Interior**

**U.S. Department of the Army**

**U.S. Department of the Navy**

**U.S. Department of the Justice**

**U.S. Department of the Education**

**U.S. Department of the Health and Human Services**

**U.S. Department of the Agriculture**

**U.S. Department of the Energy**

**U.S. Department of the Environment**

**U.S. Department of the Labor**

**U.S. Department of the State**

**U.S. Department of the Treasury**

**U.S. Department of the Veterans Affairs**

**U.S. Department of the War**

**U.S. Department of the Navy**

**U.S. Department of the Army**

**U.S. Department of the Air Force**

**U.S. Department of the Space**

**U.S. Department of the Defense**

**U.S. Department of the Intelligence**

**U.S. Department of the Information**

**U.S. Department of the Technology**

**U.S. Department of the Innovation**

**U.S. Department of the Future**

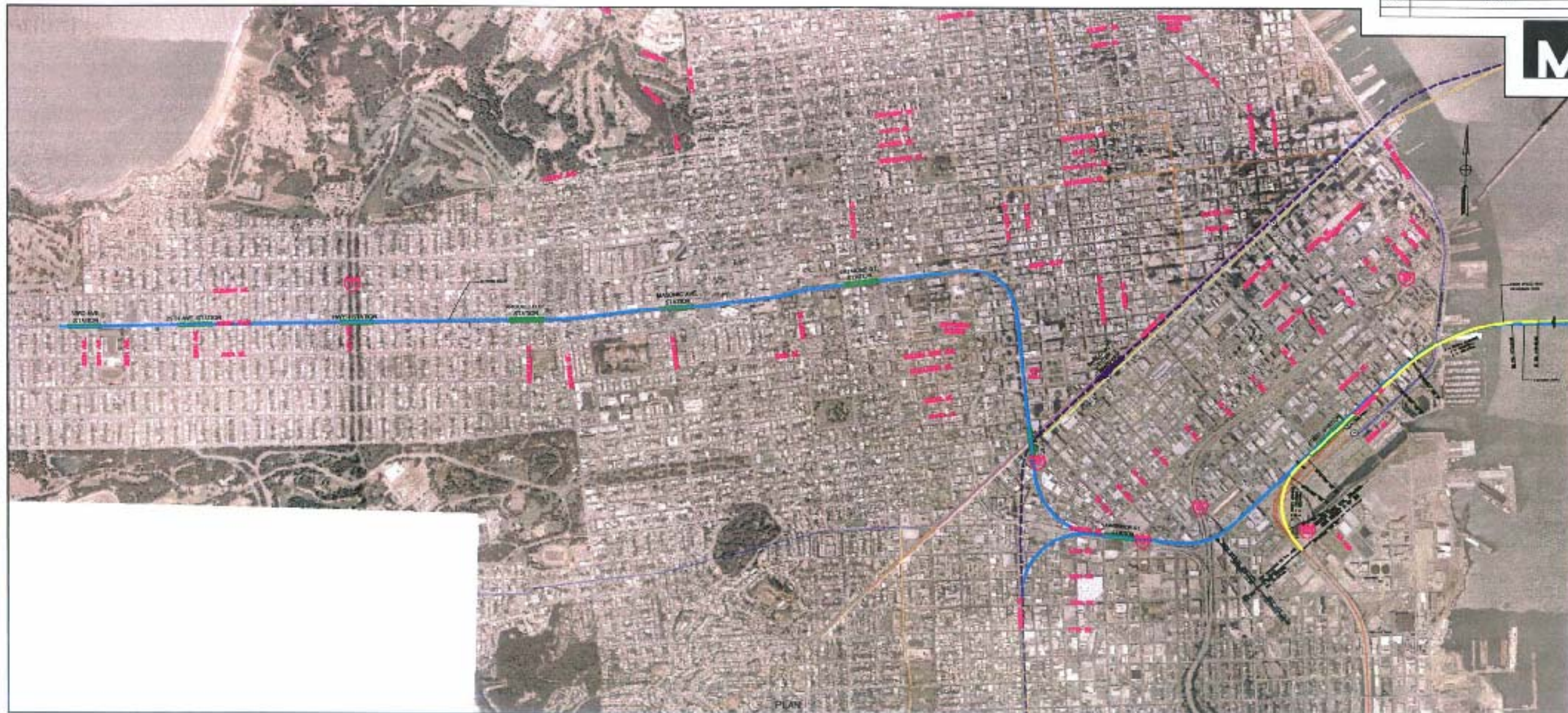
**SCALE**

1" = 1 MILE

**DATE** 01-08-16

**SHEET** 35011





NOTE: PLANS ARE CONCEPTUAL AND SUBJECT TO CHANGE

PLAN

DATE	REVISION



SHEET 04/25/11  
DATE 01/09/07  
SCALE 1" = 1 MILE

**BAY AREA - BAY CROSSING  
BART OPTION 1  
LOMBARD/VAN NESS/TOWNSEND ST. ALIGNMENT**

CAIFORNIA HIGH-SPEED TRAIN PROGRAM ENVIRONMENTAL IMPACT REPORT / ENVIRONMENTAL IMPACT STATEMENT





**ATTACHMENT D**  
**TRI VALLEY SCREENING MEMO**

## **Alternatives Considered and Withdrawn**

Following additional review of the candidate alignments for the Altamont Pass Options, it is recommended that three alignment segments be withdrawn from further consideration as High Speed Train (HST) alignments and that a new HST option be added for consideration. Figure 1 on the following page shows the three alignments proposed for withdrawal as well as the proposed new option. Reasons for these refinements are described below.

### **SR-84 / South of Livermore Alignment:**

This alignment would extend east near the UPRR alignment through Niles Canyon then follow the SR-84 corridor south of Pleasanton and Livermore and continue east (south of Livermore) to the Patterson Pass corridor and to Tracy. Station options include the Pleasanton (I-680/SR-84) Station, or Livermore (South Isabel).

#### **Alignment Issues**

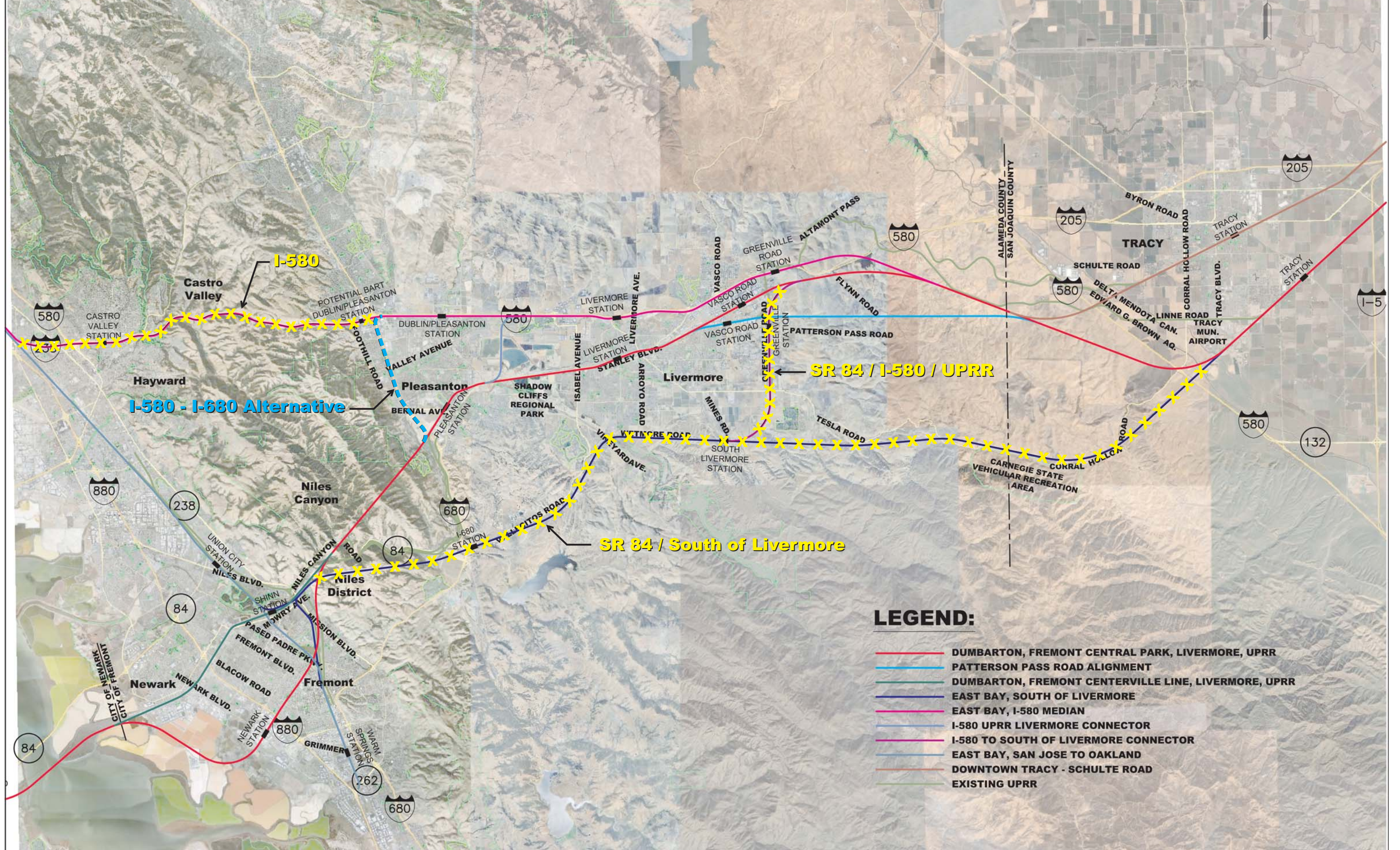
- **Conservation Easements** – In the mid 1980s, citizens approached Alameda County about a plan allowing for agriculture to be preserved and reinvigorated. The county put forward a plan that requires land to be put under easement for agricultural use to offset housing developments in the southern half of the Valley.

The South Livermore Valley Area Plan that came about several years later required developers to find or plant an acre of cultivatable agriculture for every lot that was built up and for every acre covered with housing. The easements were put into the hands of the South Livermore Valley Area Trust, now the Tri-Valley Conservancy, which holds them in perpetuity. There are 3,059 agricultural acres in 30 properties under easement, mostly vineyards, olive groves and grazing. There is one non-agricultural easement of 371 acres of parkland.

(Figure 2 shows the location of the SR-84/South of the proposed Livermore High Speed Train Alignment and its relation to the easements, as they existed in 2002.)

- **Concern for Presence of Endangered Species** – There are several state and federal Endangered Species Act issues that would require consideration. Due to the more rural location of the South of Livermore Alignment, there is a higher likelihood of project affects including creation of a barrier to migration for California tiger salamanders and California red-legged frog. This area is the northern range of the San Joaquin kit fox. This alignment may also create a barrier for movement by this species and further fragments the remaining habitat for these species leading to greater population isolation and local extinction. There is also a greater potential for effects to Alameda whipsnakes in the Sunol Valley area and listed branchiopods (fairy shrimp) along this alignment. The Sunol Valley is the only likely connection between two large populations of the Alameda whipsnakes, so a major rail line through that area would create another barrier/hazard that could make the connection more tenuous.





XXXXX Affected Alignment

----- Potential Alternative Alignment

## TRI-VALLEY POTENTIAL ROUTES

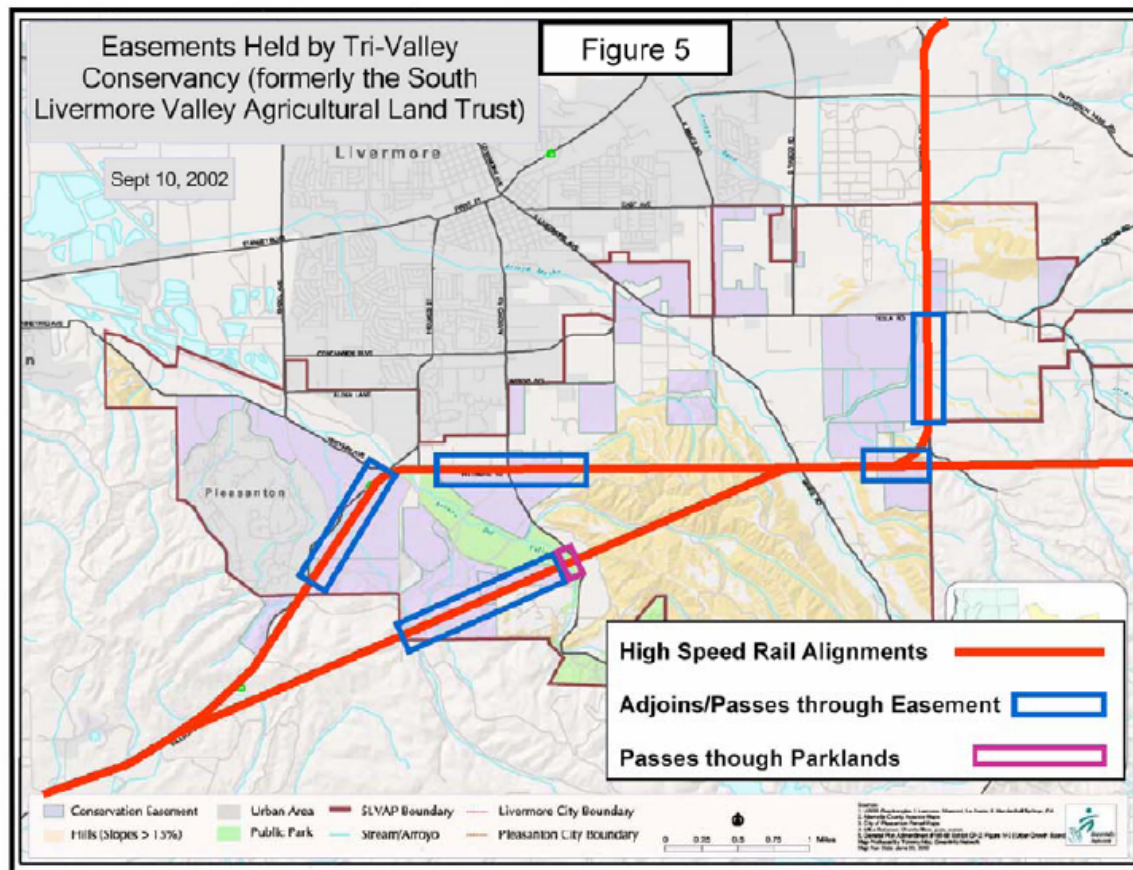
**EarthTech**  
A Tyco International Ltd. Company

2101 Webster St., Suite 1000  
Oakland, CA 94612  
Phone: (510) 419-6000  
Fax: (510) 419-5355





**Figure 2**  
**Easements and Parklands Impacts**  
**Vicinity of Livermore**



- Service to Urban Centers and Connectivity – The South of Livermore alignment would by-pass the existing urbanized areas of Livermore, Pleasanton and Dublin and is remote with respect to the existing BART and Altamont Commuter Express routes. As such, it would not be feasible to provide regional or longer-distance services which would provide convenient access to downtown Livermore or Pleasanton. Candidate locations along this segment would not support transit-oriented development to the extent that downtown stations would. Development of a transfer point with BART would not be feasible without a significant extension of the BART line.

#### Affected Segments to be Dropped from Further Consideration

As a result of these issues, the entire South of Livermore segment between Niles and I-580 near Tracy would be omitted from further consideration. In addition, as the SR-84 / I-580 / UPRR connector segment paralleling Greenville Road would no longer connect to a viable segment, this connector would also be eliminated.

I-580 Median Alignment between Bay Fair and Pleasanton:

This alignment would extend east along the I-580/BART corridor from Bay Fair to Pleasanton.

Existing and planned conditions

The corridor is presently occupied by the BART system. There are two existing stations; Castro Valley and the Dublin/Pleasanton Station. A future “infill” station is presently under design for West Dublin. This station will be located just west of the I-680 overcrossing. The present and future stations are all center platform type stations with fairly narrow widths.

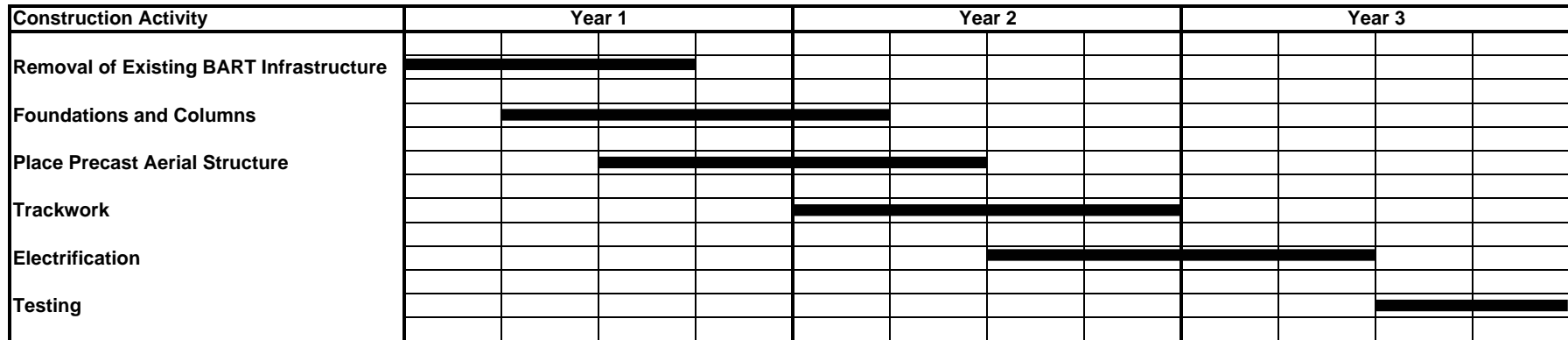
The BART alignment is currently designed for an operational speed of 75mph. There is a system of layover tracks just east of the Dublin/Pleasanton Station. BART currently operates fairly short trains with 15 minute headways on this line to meet the needs of the current ridership.

The highway median is approximately 65 to 70 feet wide, with a track spacing that could allow for a support column for an aerial structure. Alternatively, double column structure spanning over the tracks and stations could be designed. A “flyover” connector ramp accommodates the southbound I-680 to eastbound I-580 movement. This ramp is at the third level; BART and I-580 at the lowest level, I-680 main lanes at the next level and the “flyover” at the third level. A future “flyover” from westbound I-580 to southbound I-680 is planned for the near future; this ramp would be at the fourth level.

Alignment Issues

- Construction Period Impacts – This alternative would replace the existing BART system with high-speed and regional rail infrastructure and service resulting in impacts to the existing operating BART system between the Pleasanton / East Dublin terminus and Bayfair stations for a number of years to allow for the decommissioning of BART, construction of the new infrastructure, and testing and commissioning of the new service. A practical construction schedule including removal of the existing BART infrastructure, foundation and aerial structure placement, trackwork installation, electrification, and testing and startup would be three to four years in duration. Steps could be taken to provide limited BART services during portions of the construction period (particularly during the early phases of construction including the removal of BART); however, since the end result is replacement of the system, it is unlikely that these steps would result in eliminating a significant full closure period. (See potential construction schedule shown in Figure 3.) The removal of existing and growing transit services conflicts with the purpose and need and objectives of this project (i.e., “Improve public transportation systems and services” or “Enhance efficient operation of transportation facilities and service”). The completion of the existing Dublin Pleasanton Extension (DPX) to the BART system represents an infrastructure investment of over \$500 million dollars of public funds and a six year construction effort. In addition to the impacts to BART, there would be impacts to the existing freeway facility to accommodate various construction phases, potentially narrowing and shifting existing lanes.

**Figure 3**  
**Estimated "Best Case" Schedule for Replacement of Dublin-Pleasanton BART with proposed HSR**



Engineering Feasibility of West Dublin Station – Due to the presence of the existing I-580 / I-680 freeway-to-freeway interchange and the proposed new connector ramp at the fourth level, the high speed rail express tracks would need to be provided along a continuously high (80'+) aerial structure at the fifth level through the interchange area and for nearly one mile in either direction to accommodate high speed operation.

- Reduced Operating Speeds – Operating speeds are highly constrained (<100mph) through significant portions of the alignment due to numerous restrictive curves in many sections. The existing BART system was designed within the I-580 median for operational speeds of 75mph.
- Impact at Station Areas and Connecting Tracks – Additional rights of way would be required for station areas and connections (crossovers) between tracks. These areas of additional right of way are impractical since they necessitate the shifting and reconstruction of I-580 and would likely displace significant areas of existing land uses. The median of I-580 is approximately 65-70 feet wide. Station platforms and tracks would require 90-100 feet of width. Crossovers between the express tracks (aerial) and the regional rail tracks (at-grade) would require up to 60 feet of additional right of way for up to one mile in length at one or more locations along this segment to provide sufficient capacity and reliability.
- Impact of Connection to South in Hayward – For a HST connection from the I-580 Corridor to the South, the HST would need to pass through an established neighborhood in an aerial configuration, bisecting this residential area. Figure 4 shows where the alignment would pass through this neighborhood.

#### Affected Segments to be Dropped from Further Consideration

As a result of these significant concerns, the portion of the I-580 alignment segment extending through the I-580 / I-680 interchange and extending west to Hayward would be dropped from further consideration.

**Figure 4**  
**I-580 High Speed Rail Alignments Connecting to the North and South**  
**Vicinity of SR-238 & I-880**



### **Alternative Alignment (sub-option) to be Added for Consideration**

East of the existing BART facilities, the I-580 median is being considered for High-Speed Rail (the “I-580/UPRR” option). By limiting the overlap between BART and the high speed system to the portion of the BART system east of the I-680 interchange, it would be potentially feasible to follow I-580 to the existing BART Dublin / Pleasanton station and then swing to the south paralleling I-680 to connect with the proposed tunnel connection to Niles along the UPRR alignment (see Figure 1). This “I-580/I-680/UPRR” would be a sub-option of the existing I-580/UPRR alignment. The cities of Livermore and Pleasanton suggested that this sub-option be evaluated.

While measures would need to be taken to construct high speed rail facilities over portions of the existing BART station and tailtrack facilities, use of significant construction-period mitigations and staging such as construction falsework, pre-fabricated segments, and limited hours of construction for high-impact activities could potentially allow the use of the I-580 alignment. An additional advantage of this option is the possibility of developing a transfer point between the two systems at the location of the existing end-of-line BART station at East Dublin / Pleasanton.